Volume 166 July-December 1984

NATIONAL GEOGRAPHIC

INDEX

July-December 1984

VOLUME 166

PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
WASHINGTON, D. C.

UMI

NATIONAL GEOGRAPHIC SOCIETY

WASHINGTON, D. C.

Organized "for the increase and diffusion of geographic knowledge"

GILBERT HOVEY GROSVENOR
Editor, 1899-1954; President, 1920-1954
Chairman of the Board, 1954-1966

THE NATIONAL GEOGRAPHIC SOCIETY is chartered in Washington, D. C., in accordance with the laws of the United States, as a nonprofit scientific and educational organization. Since 1890 the Society has supported more than 2,600 explorations and research projects, adding immeasurably to man's knowledge of earth, sea, and sky. It diffuses this knowledge through its monthly journal, NATIONAL GEOGRAPHIC; its books, globes, atlases, filmstrips, and educational films; *National Geographic WORLD*, a magazine for children age 8 and older; information services; technical reports; exhibits in Explorers Hall; and television.

GILBERT M. GROSVENOR, President
OWEN R. ANDERSON, Executive Vice President
ALFRED J. HAYRE, Vice President and Treasurer
FREDERICK C. GALE, LEONARD J. GRANT, JOSEPH B. HOGAN, ADRIAN L. LOFTIN, JR., LEWIS P. LOWE, RAYMOND T. McELLIGOTT, JR., Vice Presidents
EDWIN W. SNIDER, Secretary and Corporate Counsel

BOARD OF TRUSTEES

MELVIN M. PAYNE, Chairman of the Board
OWEN R. ANDERSON, Vice Chairman
LLOYD H. ELLIOTT, Vice Chairman
President, George Washington University
THOMAS W. McKNEW, Advisory Chairman

THOMAS E. BOLGER
Chairman of the Board, Bell Atlantic

FRANK BORMAN, Chairman of the Board and President, Eastern Airlines

LEWIS M. BRANSCOMB
Vice President and Chief Scientist, IBM Corporation

ROBERT L. BREEDEN

J. CARTER BROWN, Director, National Gallery of Art

WARREN E. BURGER
Chief Justice of the United States

MICHAEL COLLINS
Vice President, LTV Aerospace and Defense Company

GEORGE M. ELSEY, President Emeritus, American Red Cross

WILBUR E. GARRETT

GILBERT M. GROSVENOR

ARTHUR B. HANSON, Attorney

A. LEON HIGGINBOTHAM, JR.
Judge, U. S. Court of Appeals for the Third Circuit

JEROME H. HOLLAND
Former U. S. Ambassador to Sweden

CARLISLE H. HUMELSINE
Chairman of the Board, The Colonial Williamsburg Foundation

MRS. LYNDON B. JOHNSON

CURTIS E. LeMAY, Former Chief of Staff, U. S. Air Force

LAURANCE S. ROCKEFELLER
Chairman, Memorial Sloan-Kettering Cancer Center

ROBERT C. SEAMANS, JR.
Department of Aeronautics and Astronautics, Massachusetts Institute of Technology

JAMES H. WAKELIN, JR., Former Assistant Secretary of Commerce for Science and Technology

CONRAD L. WIRTH, Former Director, National Park Service

Trustees Emeritus

CRAWFORD H. GREENEWALT
CARYL P. HASKINS
WM. McCHESNEY MARTIN, JR.
FREDERICK G. VOSBURGH
JAMES E. WEBB

COMMITTEE FOR RESEARCH AND EXPLORATION

MELVIN M. PAYNE, Chairman
T. DALE STEWART, BARRY C. BISHOP, Vice Chairmen
HARM J. DE BLIJ, Editor, *National Geographic Research*
EDWIN W. SNIDER, Secretary

GILBERT M. GROSVENOR, CARYL P. HASKINS, Former President, Carnegie Institution of Washington, THOMAS W. McKNEW, BETTY J. MEGGERS, Research Associate-Anthropology, Smithsonian Institution, PETER H. RAVEN, Director, Missouri Botanical Garden, CHARLES H. SOUTHWICK, Professor of Biology, University of Colorado, GEORGE E. STUART, JAMES H. WAKELIN, JR., GEORGE E. WATSON, Curator of Birds, Smithsonian Institution, FRANK C. WHITMORE, JR., Research Geologist, U. S. Geological Survey, CONRAD L. WIRTH, HENRY T. WRIGHT, Professor of Anthropology, University of Michigan, and PAUL A. ZAHL

ASSISTANT VICE PRESIDENTS: James P. Kelly, Thomas E. Kulikosky, Ross L. Mulford, Ward S. Phelps, Cletis Pride. **ASST. TREASURER:** H. Gregory Platts. **ASST. SECRETARY:** Earl Corliss, Jr. **ASSTS. TO THE PRESIDENT:** Joyce W. Graves, Richard E. Pearson, Suzanne Dupré

ADMINISTRATIVE STAFF: *Accounting:* Dorothy L. Dameron, Jay H. Givans, Laura L. Leight, William G. McGhee, George E. Newstedt, David H. Peters. *Administration:* D. Evelyn Carnahan, Robert V. Koenig, Zbigniew Jan Lutyk, Marta M. Marschalko, Myra A. McLellan, Jennifer Moseley, Shirley Neff, Janet C. Newell, Jimmie D. Pridemore, Joyce S. Sanford, Frank M. Twigger. *Computer:* James G. Schmelzer, William L. Chewning, Ronald C. Kline, Richard A. Mechler, Harold E. Smith. *Educational Services:* Wendy G. Rogers, Dean R. Gage, Carl W. Harmon, Jr. *Employee Benefits:* Howard R. Hudson. *Membership Services:* Margaret L. Bassford, Robert C. Dove, William T. McDonnell, Paul B. Tylor, Dorothy M. Wagner, Marguerite M. Wise, Peter F. Woods. *Personnel:* Thomas L. Hartman, M.D., Robert E. Howell, Glenn G. Pepperman, Shirley N. Wilson. *Printing:* Joe M. Barlett, Frank S. Oliverio, Margaret A. Slifer, Hans H. Wegner. *Promotion:* Joseph S. Fowler, Joan Anderson, Eileen W. Bowering, James R. Dimond, Jr., Robert L. Feige, Thomas M. Kent, Charles T. Kneeland, F. William Rath. *Purchasing:* Robert G. Corey, Thomas L. Fletcher, Sheila H. Immel

ADVERTISING: *Director:* George E. Moffat, 1251 Avenue of the Americas, New York 10020. *U. S. Advertising Manager:* William K. Hughes. *Office Mgrs.—New York:* William M. Donohoe. *Chicago:* Philip G. Reynolds. *Detroit:* O. W. Jones, Jr. *Los Angeles:* Robert D. Johnson. *San Francisco:* James D. Shepherd. *Europe:* Michel A. Boutin, 90 Ave. des Champs Elysées, Paris. *Marketing/Research:* Alex MacRae. *Promotion:* Pandora Browne. *Administration:* Blanche Coffey. *Business:* Patti A. Delaney-Epple. *Production:* G. Sarita Lapham, Washington, D. C.

COPYRIGHT © 1985 National Geographic Society, 17th and M Sts., N.W., Washington, D. C. 20036.

MELVIN M. PAYNE *Chairman of the Board*

NATIONAL GEOGRAPHIC MAGAZINE

GILBERT M. GROSVENOR *President*
WILBUR E. GARRETT *Editor*
JOSEPH JUDGE *Associate Editor*

SENIOR ASSISTANT EDITORS

John B. Garver, Jr., *Cartography* Robert E. Gilka, *Photography*
William Graves, *Expeditions* Robert P. Jordan, *Special Projects*
H. Edward Kim, *Layout* Edward J. Linehan, *Manuscripts*
Samuel W. Matthews, *Production* O. Louis Mazzatenta, *Control Center*
Charles McCarry, *Contract Writers* Howard E. Paine, *Art*
Carolyn Bennett Patterson, *Legends* Thomas R. Smith, *Illustrations*
Mary G. Smith, *Research Grant Projects* Kenneth F. Weaver, *Science*
Ann K. Wendt, *Research*

TEXT

ASSISTANT EDITORS: Kent Britt, Thomas Y. Canby, Rowe Findley, Bart McDowell, Elizabeth A. Moize, Merle Severy
SENIOR WRITERS: Thomas J. Abercrombie, David S. Boyer, Mike Edwards, William S. Ellis, Rick Gore, Noel Grove, John J. Putman, Peter T. White
SENIOR EDITORIAL STAFF: Harvey Arden, Robert Booth, Allen A. Boraiko, John L. Eliot, Boyd Gibbons, Alice J. Hall, Bryan Hodgson, David Jeffery, Michael E. Long, Priit J. Vesilind, Gordon Young. *Production:* John L. McIntosh
EDITORIAL STAFF: Judith Brown, Larry Kohl, Douglas Lee, Louise E. Levathes, Peter Miller, Cathy Newman, Cliff Tarpy, Jane Vessels
RESEARCH: Lesley B. Rogers (Assoc. Dir.); Michaeline A. Sweeney (Asst. Dir.); *Researcher-Editor:* Susan L. Anderson. *Researchers:* Carolyn H. Anderson, Rebecca Beall, Julia G. Grover, Ann B. Henry, Jan Holderness, Kathy B. Maher, Barbara W. McConnell, Jean B. McConville, Margaret S. Nottingham, Jeanne E. Peters, Frances W. Shaffer. *Geography:* Bette Joan Goss. *Legends:* Victoria C. Ducheneaux, Abigail A. Tipton. *Planning Council:* Gaither G. Kyhos, Mary McPeak

ILLUSTRATIONS

PHOTOGRAPHERS: Dean Conger, Joseph J. Scherschel (Assistant Directors); James L. Amos, Joseph H. Bailey, James P. Blair, Victor R. Boswell, Jr., Jodi Cobb, Bruce Dale, David Alan Harvey, Otis Imboden, Emory Kristof, Joseph D. Lavenburg, Bianca Lavies, Bates Littlehales, Robert W. Madden, George F. Mobley, Robert S. Oakes, Steve Raymer, Robert F. Sisson *(Nat. Science)*, James L. Stanfield. *Administration:* Claude E. Petrone, Susan A. Smith
ILLUSTRATIONS EDITORS: W. Allan Royce (Assistant Director); David L. Arnold, Taylor Gregg, Bruce A. McElfresh, Charlene Murphy, Robert S. Patton, Elie S. Rogers, Jon Schneeberger, Susan Welchman
LAYOUT: Constance H. Phelps, William T. Douthitt
ART: Jan Adkins, J. Robert Teringo (Assoc. Dirs.); *Artists:* William H. Bond, Ned M. Seidler. *Design:* Charles C. Uhl (Asst. Dir.); Betty Clayman-DeAtley
ENGRAVING AND PRINTING: William W. Smith (Director); James R. Whitney (Assoc. Dir.); Bill M. Aldridge, John T. Dunn, Judy L. Garvey, John W. Gergel

CARTOGRAPHY

Richard J. Darley (Sr. Assoc. Dir.); John F. Shupe (Assoc. Dir.); Hal Aber, Walter Q. Crowe, John F. Dorr, Harold A. Hanson, Harry D. Kauhane, Richard K. Rogers, Elie Sabban (Asst. Dirs.). *Map Editors:* Thomas A. Walsh (Supvr.); John T. Blozis, Russel G. Fritz, Charles W. Gotthardt, Jr., Thomas L. Gray, Mary Anne McAleer, Gus Platis. *Artists:* Lisa Biganzoli, John W. Lothers, Nancy Schweickart, Sally Suominen-Summerall, Tibor G. Toth. *Archaeologist:* George E. Stuart. *Geographer:* Ted Dachtera. *Researchers:* Timothy J. Carter, Ross M. Emerson, Marguerite B. Hunsiker, Mary C. Latham, Dorothy A. Nicholson, Douglas A. Strobel, Susan Young. *Map Artists:* Roland R. Nichols, Leo B. Zebarth (Supvrs.); Iskandar Baday, Alfred L. Zebarth. *Specialists:* Charles F. Case, Martin J. Golden, Thomas A. Wall. *Scheduling:* Charles L. Miller, Henri A. Delanghe. *Admin:* Catherine M. Hart, Patricia M. Oakes

EDITORIAL SERVICES

ADMINISTRATION: M. Jean Vile (Asst. to the Editor), Elaine Rice Ames, Marie L. Barnes, G. Merrill Clift, Neva L. Folk, Lilian Davidson, Virginia H. Finnegan, Eleanor W. Hahne, Ellen E. Kohlberg, Liisa Maurer, Lucille L. McInerney, Carol D. Rhoads. *Picture Requests:* Barbara A. Shattuck. *Correspondence:* Carolyn F. Clewell, Gwendolyn C. Blackman, Joseph M. Blanton, Jr. *Indexes:* Jolene M. Blozis. *Travel:* Virginia A. Bachant
LIBRARIES: *Publications:* Susan Fifer Canby (Director); Patricia Murphy Smith, Margery K. Barkdull, Karen F. Carrick, Carolyn Locke, Louise A. Robinson, Marta Strada. *Records & Illustrations:* Lorie Northrop (Director); L. Fern Dame, Mary Anne McMillen, Carolyn J. Harrison, Jeannette S. Moobetry, Marguerite S. Northwood, Mennen M. Smith. *Photo Archivist:* Volkmar Wentzel. *Films:* Betty G. Kotcher
NEWS SERVICE: Paul Sampson (Director); Joy Aschenbach, Kenneth C. Danforth, Donald J. Frederick, Rebecca R. Kirtland, Barbara S. Moffet, William J. O'Neill. *Radio:* Robert C. Radcliffe
PHOTOGRAPHIC LABORATORIES AND TYPESETTING: Carl M. Shrader (Director); Milton A. Ford (Associate Director); Lawrence F. Ludwig (Asst. Director); Herbert Altemus, Jr., Billy R. Barnett, Richard A. Bredeck, David H. Chisman, Ellwood M. Kohler, Jr., Geoffrey T. McConnell, William S. Petrini, Bernard G. Quarrick, Joan S. Simms, James H. Trott, Alfred M. Yee

RELATED EDUCATIONAL SERVICES OF THE SOCIETY

ROBERT L. BREEDEN *Vice President*

SENIOR ASSISTANT EDITORS: Donald J. Crump, *Special Publications and School Services;* Charles O. Hyman, *Book Service*
BOOK SERVICE: Ross Bennett (Assoc. Dir.); Greta Arnold, Mary Dickinson, Karen F. Edwards, Anne D. Kobor, J. Edward Lanouette, Carol B. Lutyk, Linda B. Meyerriecks, Elizabeth Newhouse, Suzanne K. Poole, David F. Robinson, Shirley Scott, David M. Seager, Margaret Sedeen, Susan Sidman, Penelope Timbers, Jonathan Tourtellot, Anne Withers
SPECIAL PUBLICATIONS AND SCHOOL SERVICES: Philip B. Silcott (Assoc. Dir.); William L. Allen, William R. Gray (Asst. Dirs.); John G. Agnone, Jody Bolt, Jane H. Buxton, Margery G. Dunn, Toni Eugene, Seymour L. Fishbein, Ron Fisher, Patricia F. Frakes, Barbara Grazzini, Mary Ann Harrell, Suzanne J. Jacobson, Bonnie S. Lawrence, Christine E. Lee, Jane R. McCauley, Tom Melham, Robert Messer, H. Robert Morrison, Thomas O'Neill, Thomas B. Powell III, Cynthia Ramsay, Jennifer C. Urquhart, George V. White. *National Geographic WORLD:* Ralph Gray (Editor); Pat Robbins (Mng. Ed.); Jacqueline Geschickter, Pat Holland, Joan Hurst, Tee Loftin, Margaret McKelway, Veronica Morrison, Judith Rinard, Eleanor Shannahan, Ursula Vosseler. *Educational Media:* George Peterson (Editor); Jimmie Abercrombie, David F. Beacom, James B. Caffrey
PUBLICATIONS ART: John D. Garst, Jr. (Director); Virginia L. Baza (Asst. Dir.). *Map Artists:* Isaac Ortiz, Peter J. Balch
TELEVISION AND FILMS: Dennis B. Kane (Director); Sidney Platt (Director, Educational Films); Donald M. Cooper, Anne B. Keiser, Yeorgos N. Lampathakis, Karen S. Marsh, Louise C. Millikan, Marjorie M. Moomey, Nola L. Shrewsberry, Kathleen F. Teter, Carl E. Ziebe
AUDIOVISUAL: Joanne M. Hess (Director); Jon H. Larimore (Tech. Director); Ronald S. Altemus, Robert G. Fleegal, Paul Gorski, Gerald L. Wiley

Contents

Page

JULY 1984

EDITOR'S PAGE 1
THE UNDERGROUND RAILROAD 3
By Charles L. Blockson, with photographs by Louie Psihoyos
SCOTLAND, GHOSTS, AND GLORY 40
By Rowe Findley, with photographs by Peter Carmichael
THE FORGOTTEN FACE OF EVEREST 71
By Andrew Harvard, with photographs by expedition members
CONQUEST OF THE SUMMIT 79
By James D. Morrissey
TIME AND AGAIN IN BURMA 90
By Bryan Hodgson, with photographs by James L. Stanfield
THE GREAT GRAY OWL 123
Article and photographs by Michael S. Quinton

AUGUST 1984

EDITOR'S PAGE 137
MEXICO CITY: AN ALARMING GIANT 138
By Bart McDowell, with photographs by Stephanie Maze
A SCHOLARLY PRESIDENT LOOKS AT MEXICO'S FUTURE 175
By the Editor
THE WORLD'S URBAN EXPLOSION 179
By Robert W. Fox, with graphics by Allen Carroll
COLORADO DREAMING 186
By Mike Edwards, with photographs by Craig Aurness (West Light)
CENTRAL ROCKIES, The Making of America series—double supplement map
THE WHALES CALLED "KILLER" 220
By Erich Hoyt, with photographs by Flip Nicklin
THE JAPAN ALPS 238
By Charles McCarry, with photographs by George F. Mobley
THE PREPOSTEROUS PUFFER 260
By Noel D. Vietmeyer, with photographs by Joseph J. Scherschel

SEPTEMBER 1984

EDITOR'S PAGE 271
DALLAS! 272
By Griffin Smith, Jr., with photographs by David Alan Harvey
ICELAND'S WILD GLACIER-BORN RIVER 306
By Paul Vander-Molen, with photographs by Robert Grégoire and Jean-Luc Chéron
THE OKIES—BEYOND THE DUST BOWL 322
By William Howarth, with photographs by Chris Johns
DO WE TREAT OUR SOIL LIKE DIRT? 350
By Boyd Gibbons, with photographs by Steven C. Wilson (Entheos)
PATTERNS OF PLENTY: THE ART IN FARMING 391
Photographic essay by Georg Gerster
MAN AND MANATEE: CAN WE LIVE TOGETHER? 400
By Alice J. Hall, with photographs by Fred Bavendam (Peter Arnold, Inc.)
MAN CAN SAVE THE MANATEE 414
By Jesse R. White

UMI

Page

OCTOBER 1984

EDITOR'S PAGE 419
FOLLOWING CORTÉS: PATH TO CONQUEST 420
By S. Jeffrey K. Wilkerson, with photographs by Guillermo Aldana E. and paintings by Ned Seidler and Rosalie Seidler
IBERIA'S VINTAGE RIVER 460
By Marion Kaplan, with photographs by Stephanie Maze
A TRAVELER'S MAP OF SPAIN AND PORTUGAL—double supplement map
POLLEN: BREATH OF LIFE AND SNEEZES 490
By Cathy Newman, with photographs by Martha Cooper
MAORIS: AT HOME IN TWO WORLDS 522
Article and photographs by Yva Momatiuk and John Eastcott
MAORIS: TREASURES OF THE TRADITION 542
By Douglas Newton, with photographs by Brian Brake
OUR SOCIETY OPENS NEW DOORS 554
By Gilbert M. Grosvenor

NOVEMBER 1984

EDITOR'S PAGE 561
NORTH AMERICAN WATERFOWL: TROUBLES AND TRIUMPHS 562
By John Madson
AFRICA ADORNED 600
Text and photographs by Angela Fisher
ICEBOUND IN ANTARCTICA 634
By David Lewis, with photographs by Mimi George
CHOCOLATE: FOOD OF THE GODS 664
By Gordon Young, with photographs by James L. Stanfield and Sisse Brimberg
MARKING TIME IN GRENADA 688
By Charles E. Cobb, Jr., with photographs by David Alan Harvey

DECEMBER 1984

EDITOR'S PAGE 711
MONSOONS: LIFE BREATH OF HALF THE WORLD 712
By Priit J. Vesilind, with photographs by Steve McCurry
SOUTH ASIA; PEOPLES OF SOUTH ASIA—double supplement map
TIGER! LORD OF THE INDIAN JUNGLE 748
By Stanley Breeden, with photographs by Belinda Wright
RARE LOOK AT SPERM AND BLUE WHALES: THE UNKNOWN GIANTS 774
By Hal Whitehead, with photographs by Flip Nicklin
A JOURNEY DOWN OLD U. S. 1 790
Photographs and text by Bruce Dale
BEYOND SUPERMOUSE: CHANGING LIFE'S GENETIC BLUEPRINT 818
By Robert F. Weaver, with photographs by Ted Spiegel (Black Star)
KEY TO '84 848
A guide to articles in the 1984 issues of NATIONAL GEOGRAPHIC

Index VOLUME 166 JULY-DECEMBER 1984

July	pp.	1-136	October	pp.	419-560
August	pp.	137-270	November	pp.	561-710
September	pp.	271-418	December	pp.	711-848

Titles and illustrations in boldface

A

ATGC (gene message): Diagram **822-823**
Aberdeen, Scotland 46, 54; Heliport **46**
Abidjan, Ivory Coast: Cacao exports 673
Abolitionists: ***The Underground Railroad.*** By Charles L. Blockson. July, 3-39
Aboriginals (Australia) 732, **734, 735,** 736; Dugong harvesting 402
Ackerman, Joyce 807
Acosta Lagunes, Agustín 432
Actopan River, Mexico 434-435
Adam, Robert 59
Adams, Richard E. W. 137, **137,** 137A, 137B, **137B**
Adelaide Ferreira, Antónia 482
Adélie penguins **646-647, 652-653, 654, 655;** As food 654; Research 642, 647, 650, 661
Adolph Coors Brewery, Golden, Colo.: Brewing process 209; Company picnic **208-209**
Adrian, Ga.: Tobacco farm **374-375**
Adzes: Maoris **544-545**
Afghanistan: *South Asia, with Afghanistan and Burma; Peoples of South Asia.* Dec. supplement
Africa: ***Africa Adorned.*** By Angela Fisher. Nov., 600-633; Monsoon winds 718; Population figures 182, birthrate 182; *see also* West Africa
African-American Mysteries, Order of 17
Afurada, Portugal: Fishing 485; Tavern **465**
Agracetus (plant-engineering firm) 840
Agricultural research: ***Beyond Supermouse: Changing Life's Genetic Blueprint.*** By Robert F. Weaver. Dec., 818-847; Burma 104; Spain 469, 470, 473
Agriculture: ***Do We Treat Our Soil Like Dirt?*** By Boyd Gibbons. Sept., 350-389; ***Patterns of Plenty: The Art in Farming.*** By Georg Gerster. Sept., 391-399; *see also* Labor, migratory
Agrigenetics Corporation 819, 834, 836-837, 841
Aguilar, Gerónimo de 433, 446
AIDS (acquired immune deficiency syndrome): Lymphokine treatment 832
Aino-dake (peak), Mount Shirane, Japan 249, 256, 258
Air pollution: Mexico City, Mexico 144, 148, **154,** 155
Aircraft *see* Ultralight aircraft
Ait Hadiddou (people): Jewelry **630;** Marriage festival 631
Akaishi Mountains, Japan 240
Aldana E., Guillermo, photographer: ***Following Cortés: Path to Conquest.*** Oct., 420-459
Alexis, Francis 710
Alfonso VI, King (León) 467
Alfonso Henriques, King (Portugal) 485
Algeria: Jewelry **603, 631**
All Souls' Day (November 2): Mexican traditions **452-453,** 454
Allergens: Chocolate 674; Insulin, animal 824; ***Pollen: Breath of Life and Sneezes.*** By Cathy Newman. Oct., 490-451
Alling, Gay 777, 780, 784
Alma, Ga.: Hotel **812-813**
Almond trees: Pollen **514,** collection of **500,** 509, 510, 511, 514
Aluminum: African jewelry **632**
Alvarado, Pedro de 424
Alvarez, Roberto **172**
Alvim, Ronald 674
Amanda Bay, Antarctica 650, 661
Amaranth pollen **514**
Amarapura, Burma: Archaeological excavations 114
Amarillo, Texas 342
Amazon River basin, South America: Cacao, origin of 666, 668; Witches'-broom 674
Amber 625; African jewelry **601, 602, 624, 625, 630**
Amber, imitation: Necklaces **601, 625, 630**
Ambergris beads **620**
Amino acids: Bean protein 834, 836, 837; Diagram **825**
Amish: Christmas traditions: Chocolate-covered pretzels **681**
Anatomy class: Grenada **700**
Anaura Bay, New Zealand: Beach 522, **524-525,** 540
Anawrahta, King (Burma) 105
Ancestor spirits, belief in: West Africa 616, altar **617,** talismans 616, **616**
Anderson, Chuck 294, 304
Anderson, Rob 59
Andrade, Fernando **137B**
Anemia, sickle-cell: Genetic research 818, 832, 836
El Angel (statue), Mexico City, Mexico 149, 152, **161**
Animals *see* Wildlife
Anklets, African: Brass **602;** Bronze **616;** Silver **603, 628**
Antarctic expedition *see* Frozen Sea Expedition
Antarctica: ***Icebound in Antarctica.*** By David Lewis. Nov., 634-663
Anthony, Susan B. **12,** 35
Anthropology: Pollen analysis 496, 502-503, 506; *see also* Cultural anthropology; Human dynamics, study of
Antibodies: ***Beyond Supermouse: Changing Life's Genetic Blueprint.*** By Robert F. Weaver. Dec., 818-847
Antigens 830, 833, 838, 839
Antigua River, Mexico **429,** 438
Antonio Rosas, José **467**
Ants: Soil aeration **365,** 375
Anzac Day: Tikitiki, New Zealand **538-539**
Apache Indians: Pollen use **518,** 520
Aphrodisiacs: Chocolate 676, 683; Phenylethylamine 676
Apple trees: Pollination 510-511
Applebome, Peter 292
Apron: Iron pendants **615**
Apulco River, Mexico 446
Aquaculture: Fish farming **67,** 270; Hydroponics 416
Aquatic mammals *see* Manatees; Seals; Whales
Arafura Swamp, Australia **734**
Arboretum: Maymyo, Burma 105
Arbroath, Scotland: Abbey ruins **50;** History 51
Archaeological excavations: Burma 114, 115, 121; Guatemala 137-137B, **137-137B**
Architecture: ***Our Society Opens New Doors.*** By Gilbert M. Grosvenor. Oct., 554-560
Aresti Liguori, Alfonso 164
Arizona: Farms **394-395,** soil salt treatment **362-363;** Okies 339
Arkansas: Wetlands, drainage of 566, 567
Armlets, African **607, 610, 620, 621**
Armstrong, R. J. 58
Armstrong family name 58
Army of the People (Pyithu Tatmadaw): Burma 94, 96
Arnhem Land, Australia: Aboriginals 732, **734, 735,** 736
Arnold, Aubrey 709
Arnold, Dick 362, 376, 377
Arran, Island of, Scotland: Seacliff caves 56
Art: ***Africa Adorned.*** By Angela Fisher. Nov., 600-633; ***Maoris: Treasures of the Tradition.*** By Douglas Newton. Oct., 542-553; *see also* Photography, aerial
Art museums: Dallas, Texas 292, **299;** Mexico City, Mexico **162-163;** United States: Te Maori exhibition dates 542

Arts Magnet High School, Dallas, Texas: Dance class **298-299**
Arvin, Calif. 343
Asama, Mount, Japan 240-241
Asensio, Enrique 473
Ash, Mary Kay **285,** 290
Ashanti (people): Funerary dancer **620, 621**
Ashtabula County, Ohio: Underground Railroad 15
Asia: ***Monsoons: Life Breath of Half the World.*** By Priit J. Vesilind. Dec., 712-747; *South Asia, with Afghanistan and Burma; Peoples of South Asia.* Dec. supplement; *see also* Burma; China, People's Republic of; India; Japan
Aspen, Colo.: Lifestyle 201; Residents **187,** 201-202
Aspens: Colorado **190, 216**
Asplund, Åke 508-509
Atherton, Sandy 824
Athletes: Pollen use 496, 505, 506, 510
Atlanta, Ga.: Storefronts, pre-Civil War **8-9**
Atlantic coast, U. S.: ***A Journey Down Old U. S. 1.*** By Bruce Dale. Dec., 790-817; Waterfowl hunting areas 571, 575, 577
Auburn, N.Y.: Harriet Tubman house **35**
Audubon, James J. 597
Ault, Colo.: Farmer **360**
Aung Kyaing, U 101
Aung San 96
Aupouri, Rere Moana **523**
Aurangabad, India: Drought (1983) 736-737; Summer monsoon (1983) 746
Aurness, Craig, photographer: ***Colorado Dreaming.*** Aug., 186-219
Aurora australis 640, 651
Austin, Hudson 699
Austin, Texas 340
Australia: Antarctic research base *see* Davis Station; Droughts 731, 732, 736; Dugong 402; Monsoon rains 716, 722, 730, 731-732, 734
Avery, O. T. 832
Avian cholera 589; Victims **587**
Aweida, Jesse 203
Ayotla, Valley of, Mexico 159
Ayotzingo, Mexico 424, 455-456
Azande (people): Hairpins **612**
Aztec Indians 148, 164, 165, 168; Chocolate use 666, 683; ***Following Cortés: Path to Conquest.*** By S. Jeffrey K. Wilkerson. Oct., 420-459

B

Bacteria: Gene cloning vehicles 818, 820, 821, 824, 831, 834; Petroleum extraction potential 842; Soil **364,** 370, 372, **373,** 375
Baghmati River, India-Nepal: Bathers **729**
Baglung district, Nepal: Landslide (1983) 746
Bahia (state), Brazil: Cacao production 668, 674
Baker, Simon 318
Bakersfield, Calif. 344
Balcells Pallarés, José **687,** *Nov. cover*
Balcomb, Kenneth C., III 230, 234
Baleen 781, 788
Bali (island), Indonesia: Drought (1983) 730
Balmoral Castle, Scotland 68
Baltimore, Md.: Underground Railroad 27; U. S. Route 1 793
Bamileke (people): Architecture, decorative **614-615;** Body adornment **615**
Ban, Cathy **23**
Bandjour, Cameroon: Bamileke king's house **614-615**
Bando, Mitsugoro, VIII 263
Bangkok, Thailand: Subsidence 727, 746
Bangladesh: Monsoons 724, 728, 746
Bannockburn, Scotland: Battle (1314) 44, 51, 57
Baoulé (people): Gold pendants **602, 623**
barcos rabelos (boats) 487; Construction **472**
Barrancas, Mexico 445
Barrera, Angelina **167**
Barstow, Calif. 343
Barton, Tom 278
Bastable, Arthur C. 52
Batson, Alphonso 701
Battlement Mesa, Colo.: Shale-oil extraction plant closure 212, 217; Trailer park **212**
Bauman, Dale **827**
Bavendam, Fred, photographer: ***Man and Manatee: Can We Live Together?*** Sept., 400-413
Bawinanga Corporation 732
Bayardo, Josefina 164
Bayer, Kerry **213**
Bayou DeView (river), Ark.: Waterfowl habitat 566
Beads: ***Africa Adorned.*** By Angela Fisher. Nov., 600-633
Bean Field, Butte Sink, Calif. 593
Beans: Genetic manipulation **818-819;** 834, 837, diagram **834;** Drying **432-433;** Toxic 830; *see also* Cacao beans
Beattie, Jim **283**
Beaver, Okla. 337
Beaver Creek watershed, Ga.: Erosion **379**
Bees: Excrement **509;** Horn-faced mason bee eggs **503;** Pollen pellets 506, **510, 511;** Pollination 473, 501, 503, 511, 516
Beijing, China 728
Béjar, Feliciano 149
Bellrose, Frank 591
Beloit, Wis.: Underground Railroad agents 23
Benin: Ornaments **613, 619**
Bent Tree Country Club, Dallas, Texas: Prayer breakfasts 297
Berbers (people): Jewelry **602, 627**
Berg, Paul 832, 847
Berlanga de Duero, Spain 468
Bernal, J. D. 362
Berrier, Bruce 591
Beyond Supermouse: Changing Life's Genetic Blueprint. By Robert F. Weaver. Dec., 818-847
Beyond the Dust Bowl. By William Howarth. Sept., 322-349
Bhima River, India 737
Bhujbal, P.G. 739
Big Spring, Texas 387
Bigg, Michael A. **227,** 230, 231, 232, 236, 237
Biogen (biotechnology firm) 831, 833, 837
Bioko (island), Equatorial Guinea 666
Biotechnology: ***Beyond Supermouse: Changing Life's Genetic Blueprint.*** By Robert F. Weaver. Dec., 818-847
Birds: ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599; *see also* Great gray owl; Penguins
Birth and death rates: Population growth 182; Diagram **182-183**
Births, animal: Manatee 414-415, **416;** Sperm whale 782-783; Weddell seal **656,** 661
Bishop, Maurice 701, 705, 707; Coup against Eric Gairy (1979) 695, 701; Execution 689, 690, 694, 695; Museum relics 707
Bishop regime (Grenada): ***Marking Time in Grenada.*** By Charles E. Cobb, Jr. Nov., 688-710
Black history: ***The Underground Railroad.*** By Charles L. Blockson. July, 3-39
Black Seminoles **20-21,** 22
Blackfish Sound, British Columbia, Canada: Killer whales 230
Blades & Co., Easton, Md.: Window display **591**
Blaize, Herbert **698,** 710
Blancardi, Stephani 668
Blinds (concealment): Bird watching **125;** Hunting **592**
Blockson, Charles L.: ***The Underground Railroad.*** July, 3-39
Blockson, Jacob 3, 31, 38
Blockson, James 3, 15, 35, 38
Blockson, Minerva 28
Bloody Wednesday massacre (Grenada) 689, 690, 694, 695, 699; Site **688-689**
Bloomingdale's (store): Dallas, Texas 283, 294
Blue Spring, Fla.: Manatees 402, **412,** 413, **413**
Blue whales 781, 784, **786-787;** Diet 787, 788-789; Flukes **788-789,** breadth 789; Hunting of 787; Size 781, 786
Blum, Richard 77
Boatbuilding: Aboriginals (Australia) **734;** Carriacou (island), The Grenadines 707; Portugal **472**
Bo Bo Gyi (spirit) 107, 109

Bodawpaya, King (Burma) 114
Body adornment: ***Africa Adorned.*** By Angela Fisher. Nov., 600-633
Bojonegoro, Java (island), Indonesia: Flooded **741, 746-747**
Boles, John 200
Bombay, India: Drought (1983) 737, 739; Monsoon rains 739, arrival date 727, damage 739, 744, 746; Seasonal rainfall, graph showing **717**
Bond, David 732
Bone chests: Maoris **552, 553**
Bone marrow: Leukemia treatment 830, 843; Sickle-cell formation 836
Bonnie Prince Charlie *see* Stuart, Charles Edward
Border disputes, international 711
Bosques de las Lomas, Mexico City, Mexico 157; Country club **156-157**
Boston, Thelma 301
Boston Home for Handicapped Children, Dallas, Texas 301
Botulism: Ducks 586, 587
Boulder, Colo.: IBM plant 203; Naropa Institute **211;** Ragweed pollen level (1983) 520; University of Colorado **210**
Boulders, granite: Environmental sculpture **560**
Boundary marker: Mason-Dixon Line **7**
Bourne, Geoffrey 695
Bowling Alley (ice corridor), Mount Everest, China-Nepal **70-71,** 84
Bowser, David Bustill 32; Painting by **32**
Box, Eddie, Sr. 213
Boxers: Tepito, Mexico City, Mexico 164, **173**
Boyer, Herbert 832
Boyle, John 81
Bracelets: ***Africa Adorned.*** By Angela Fisher. Nov., 600-633
Bradford, Sarah 28
Braemar, Scotland: Highland Games **60**
Brake, Brian, photographer: ***Maoris: Treasures of the Tradition.*** Oct., 542-553
Brandy: Port wine ingredient 475, 480
Brathwaite, Nicholas 710
Brazil: Cacao **671,** 674
Breeden, Stanley **753; *Tiger! Lord of the Indian Jungle.*** Dec., 748-773
Breen, Gerry **309, 311,** 317, **319**
Brides: Burma **101;** Maori **535;** Mexico City, Mexico **167**
Brill, Winston 840, 841
Brimberg, Sisse, photographer: ***Chocolate: Food of the Gods.*** Nov., 664-687
Brinker, Cindy and Norman 291
British Columbia (province), Canada *see* Vancouver Island
British Petroleum: North Sea operations 54
Brizan, George **698,** 699, 710
Broc, Switzerland 686
The Bronx, New York, N.Y.: U. S. Route 1 804, **804, 805**
Bronze figurines: Pyu 1, **1,** 121
Brooklyn, New York, N.Y.: Ragweed pollen level (1983) 520
Brooks, Nora Gene 795
Brown, Al, Jr. 362
Brown, Helen 338
Brown, Henry "Box" 10, **11**
Brown, John 14, 23, 32-33, 35, 38-39; Grave **34;** Homes 14-15, **34;** Portrait **32;** Raid on Harpers Ferry 14, 32-33, 35, 39
Browns Park National Wildlife Refuge, Colo. 218-219
Bruce, Andrew 56, 57
Bruce, Robert, VIII *see* Robert the Bruce, King (Scotland)
Brune, Bill 381
Brussels, Belgium **677**
Bryan, John Neely 278, 279, 282, 283, 304
Bryant, Gladys 39
Bryant, Vaughn 502-503, **507**
Buckingham, Texas 283
Buddhas (statues): Burma 101, **107**
Buddhism: Xegar, Tibet 77; *see also* Burma, *outlined*
Buhler, Carlos **89**
Bullfighters: Mexico **447;** Spain 466, **489**
Burinyila, Jimmy 732
Burma:
  Bronze statues 1, **1**
  Monsoon rains 727, 730, 746
  South Asia, with Afghanistan and Burma; Peoples of South Asia. Dec. supplement.
  Time and Again in Burma. By Bryan Hodgson. July, 90-121
  Agriculture 101, 105, 107; Crops 90, 94, 101, 104, **104-105,** 105, 107; Irrigation 101, 105; Research 104, 105
  Archaeological excavations 114, 115, 121
  Buddhism: Buddhas (statues) 101, **107;** Festivals 90, **90-91;** Monasteries 109, **118-119;** Monks, initiation of **108, 109;** Nuns **110-111;** Temples 90, **92-93,** 94, **96,** 115, **116-117, 119**
  Capital *see* Rangoon
  Civil wars 96, 98, 100, 113, 115; Insurgents **112, 113**
  Deforestation 103, 105, 107
  Economy: Black market 94, 99, 109; Collapse 94; Exports 94, 103, 104, 105, 107
  Ethnic groups 98, 100, 107, 115, *see also* Karens
  Festivals: *nat pwe* 107; New Year celebration 90, **90-91**
  History 109, 114, 115, 116, 118; British rule 94, 97, 100, 105, 109, 111; Coup (1962) 94, 100; Independence 94, 100; World War II 94, 96, 109, 118
  Map 100
  Military 94, 96; Coup 94, 100
  Population 90, 109
  Religion: Hindu ritual **120-121;** Nats (spirits), belief in 107; *see also* Buddhism, *preceding*
  Teak 102-103, 105, 107; Logs **102-103**
  Tourism 94, 98-99; Visas 99, 100
Burmans (people): Population 100
Burnett, John 482
Burns, Isa and Jackie 44
Burns, Robert 58, 59, 62, 68; Birthday commemorations 40, **58,** 68
Bush, William 17; Gravestone **17**
Business Route 66 343; Tucumcari, N. Mex. 338, 342
Butler, Oscar **291**
Butte Sink, Calif. 591, 593, 594
Butz, Earl 361

C

CF&I (steelmaker), Pueblo, Colo.: Pollution control 210
Caber toss: Highland Games, Braemar, Scotland **60**
Cacamatzin (Aztec) 456
Cacao bean shells: Mill **678-679;** Livestock feed ingredient 678
Cacao beans: ***Chocolate: Food of the Gods.*** By Gordon Young. Nov., 664-687
Cacao groves: Brazil 674; Ivory Coast 669, **670,** 672
Cacao trees: ***Chocolate: Food of the Gods.*** By Gordon Young. Nov., 664-687
Cache River basin, Ark.: Waterfowl habitat preservation 566, 567
Calf twins: Research subjects **826**
Calhoon, Ed 337, 338, 339
Calhoun, Bruce 381
Caliche **356-357,** 387
California: ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349
California State College, Bakersfield, Calif.: California Odyssey Project 344
Callaway, Howard (Bo) 202
Calpan, Mexico: Cemetery **452-453;** Elevation 454; Monastery **450, 451,** 454
Calva Otento, Daniel 163
Calvin, Melvin 842-843
Cameroon: Bamileke king's house **614-615;** Body adornment **602, 605, 615**
Camouflage: Great gray owl **136;** Indian tiger 751, **752,** 758
Camp Hale (former Army camp), Colo. 199
Canada: ***The Underground Railroad.*** By Charles L. Blockson. July, 3-39; ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599; *see also* Vancouver Island, British Columbia

UMI

Canada geese 577, 583, **596, 597, 598-599;** Defensive attack **597;** Giant decoy **590;** Goslings **597**
Canadian Wildlife Service: Biologist **577;** Researchers **568**
Cancer: Fund-raisers 291-292; Research and treatment: ***Beyond Supermouse: Changing Life's Genetic Blueprint.*** By Robert F. Weaver. Dec., 818-847; Victims: Uranium miners 215
Candy: ***Chocolate: Food of the Gods.*** By Gordon Young. Nov., 664-687
Cannon, Patty 27, 28
Canoes: Aboriginals (Australia) **734;** Maoris **546,** bailer **547,** prow **546-547**
Cantinflas (character) 158
Canvasbacks (ducks) **595**
Capron, Alexander 844
Caraveo, Javier 149
Carbon dioxide deposits: Colorado 194
Cardeilhac, Paul T. 418
Cardiff, Md.: Boundary marker, Mason-Dixon Line **7**
Carenage (harbor), St. George's, Grenada **692-693,** 701
Carib Indians: Grenada 695, 701
Caribbean manatee *see* West Indian manatee
Caribbean Peacekeeping Force 699; Prison security guards **698-699**
Caribbean region: Cacao beans, introduction of 666; *see also* Grenada
Caribou, Maine 798
Carlson, Gordon 211
Carmichael, Peter, photographer: ***Scotland, Ghosts, and Glory.*** July, 40-69
Carnival, mid-August: Grenada 690, **690-691,** 693, **693,** 701
Carnotite 214
Carolina, Dave **21**
Carpenter, Ben 290
Carper, Don 566
Carrapatelo (dam), Douro River, Portugal: Lock 488
Carriacou (island), The Grenadines: Population 694; Regatta **706-707;** Shipwrights 707
Carroll, Allen, graphic designer: ***The World's Urban Explosion.*** Aug., 179-185
Carron, Loch, Scotland: Salmon farm **67**
Carter, G. H. **35**
Cassell, Jay **78,** 79, 88
Cassina Point Plantation, Edisto Island, S. C. (1862) **4-5**
Castilla-León (region), Spain: Crops 463, 469
Castles: Scotland 43, 44, 68; Spain 467, 469, 473, **484, 485**
Castor beans: Anti-tumor agent 830, 845
Castro, Fidel 697
Cattail pollen: Puberty rites **518**
Cattle, genetic traits of: Diagram and drawing **828-829**
Cells: ***Beyond Supermouse: Changing Life's Genetic Blueprint.*** By Robert F. Weaver. Dec., 818-847
Cemeteries: Calpan, Mexico **452-453;** Wolf Pit, N. C. **811;** *see also* Gravestones
Cemetery Hill, Grenada: Landowners **708**
Cempoala (Totonac capital) 425, 429, 432, 433, 459; Temples **427,** 433, 434
Center-pivot irrigation patterns: Arizona **394-395**
Central Park, New York, N.Y.: Manure gatherer **384**
Central Rockies, The Making of America map series. Aug. supplement
Central Valley, Calif. 104, 387; Rice fields **564-565,** 594; Waterfowl habitat 565, 591, 593-594, 596, preservation of 594, 596, 598-599; *see also* San Joaquin Valley
Cernelle Company, Engelholm, Sweden: Pollen products 508-509
Cervantes, Miguel de 469, 471
Cervantes Fernández, Consuelo 160, 162
Cetus (biotechnology firm) 832
Chamberlain, Kim **683**
Chameleons: Symbols in African jewelry **602, 616**
Changing Life's Genetic Blueprint. By Robert F. Weaver. Dec., 818-847
Chaos Glacier, Antarctica 651
Chapultepec Castle (museum), Mexico City, Mexico: Murals **162-163**
Chapultepec Park, Mexico City, Mexico 149; Museums **162-163**
Charbonnel et Walker (chocolate company), London, England 686
Chargaff, Erwin 846
Charles V (Holy Roman emperor) 429, 666
Chasteau, Roy 690, 710
Chatham, Ontario, Canada 38-39
Chemotherapy, alternatives to 830-832, 845
Cheesmond, David **84**
Chefs: Japan 263, 264, **264, 267**
Cherman, André 709, 710
Cherokee Outlet, Oklahoma Territory: Land rush (1893) 334-335
Chéron, Jean-Luc, photographer: ***Iceland's Wild Glacier-born River.*** Sept., 306-321
Cherrapunji, India: Annual rainfall 728; Seasonal rainfall, graph showing **717**
Chesapeake Bay, U. S.: Waterfowl 571, 575
Cheyenne Mountain, Colo.: Military complex 208
Chicago, Ill.: Candy factory 678
Chicago Aerial Survey 75
Chicago Police Department Crime Lab: Microscopist **508**
Childs, David 555
Childs, Orlo 841
Chin Hills, Burma 107
Chin State, Burma: Deforestation 107
China, People's Republic of: Border disputes 711; Meteorology 728, monsoon studies 724, 728; Summer monsoon 727, floods 727, 746, "plum rains" 725; Winter monsoon 722, 728, 737; *see also* Tibet
Chinle, Ariz.: Medicine man 520
Chital deer **766;** Tiger prey 767, **768,** 771
Chocoholics Anonymous 683
Chocolate: ***Chocolate: Food of the Gods.*** By Gordon Young. Nov., 664-687
Chocolate News (newspaper) 678
Chololoyan, Mexico 422-423, 424, 441, 443
Cholula, Mexico 448, 454; History 424, 426, 448, 454
Christian crosses: Ethiopia **603, 627**
Christiana, Pa.: Riot (1851) 31, 35
Christianity: Scotland 44, 48, 55
Christmas traditions: Amish **681**
Chromosomes 828-829
Chrysanthemum pollen: Electron micrograph **492-493**
CICLOPS (Cruickshank Information Collection Laser Optical Profiling System) 53
El Cid Campeador 467, 476
Cinco de Mayo (May 5): Festivities **200,** 201
Cities: ***The World's Urban Explosion.*** By Robert W. Fox. Aug., 179-185; *see also* Dallas, Texas; Mexico City, Mexico
Citizens' Committee to Save Cache River Basin 566
Citrus leaf: Frost prevention demonstration **846**
City planners: Mexico City, Mexico 139, 144, 149, 150, **168**
Civil rights demonstrations: Washington, D. C. **38-39,** 39
Civil War, U. S. 35; Battle of Fredericksburg 807; Causes 19, 33; Recruitment poster **33**
Clark, Jack 217
Clarke, James: Quoted 222
Clay: Soil **367,** 376, 380
Clear-cutting: Habitat destruction 134; Island Park, Idaho **134-135**
Climatology: ***Monsoons: Life Breath of Half the World.*** By Priit J. Vesilind. Dec., 712-747; *see also* Paleoclimatology
Climax Molybdenum Company, Leadville, Colo. 195
Cloning: ***Beyond Supermouse: Changing Life's Genetic Blueprint.*** By Robert F. Weaver. Dec., 818-847
Cloud, Ralph *see* Yellow Wolf
Clouds, monsoon 716, 722, **724,** 726, 730, 736, 744, 747
Club Raqueta Bosques, Mexico City, Mexico **156-157**

Clyde, River, Scotland **52-53**
Coard, Bernard 694, 695, 699
Coatepec, Mexico 438
Cobb, Charles E., Jr.: ***Marking Time in Grenada.*** Nov., 688-710
Cocoa butter 669, 674, 678
Cocoa powder 669, 674, 678
Codesal Calvo, Teresa 476
Coffin, Catherine 15, 17
Coffin, Levi 15, 17, 19; House **16-17;** Portrait **16**
Cofradía del Santísimo Cristo de las Injurias (brotherhood): Holy Week pilgrimage **488**
Cohen, Stanley 832, 846-847
Coins, silver: African jewelry **601, 604, 624-627, 630**
Coleman, Willie Mae 304
Collaborative Research (biotechnology firm) 825
Collins, Ed 593, 594, 598
Colonial America: Agriculture 376; Chocolate use 669; Coach roads 793; Slavery 4
Colorado:
Agriculture: Erosion and erosion control 360, **360, 361;** Irrigation: Salt strangulation **362**
Central Rockies, The Making of America map series. Aug. supplement
Colorado Dreaming. By Mike Edwards. Aug., 186-219
Agriculture 194, 197, **206-207,** 210; Feed lots 194, **204;** Ranches **190, 204-205;** Wheat **188-189,** 194-195, 197
Area 197
Capital *see* Denver
Eastern plains **188-189,** 194, 196, 197
Economy 189, 194, 195, 197; Economic chart 197
Elevation, average 196
Environmental concerns 186, 202, 210; Mining impact 217; Radioactive tailings 214, 215
Facts and figures 197
Flag **197**
High technology 194, 197, 203
Map 196-197
Military bases and training facilities 208; Air Force academy **198-199,** 206-207; Army camp, former 199
Mineral wealth 194, 195, 196, 211, 214; Distribution map 197
Mining 186, 197, 211, **212-213;** Gold and silver (19th century) 186, 190, 195, 196, 211; Molybdenum 195; Oil shale **212,** 215, 217; Uranium 214-215
Population 194, 197
Shale-oil extraction **212,** 215, 217-218
Ski resorts **192, 193,** 199, 200, 209; Map locating areas 196-197; Number of areas 199
Tourism 194, 197
Ute Indians 186, **195,** 213, 214
Water rights 202, 206
Colorado School of Mines: Student **213**
Colorado Springs, Colo. 207-208; Air Force academy **198-199,** 206-207
Colorado State University: Embryo Transfer Laboratory 826
Columba, Saint 44, 48, 55
Columbia, S. C.: U. S. Route 1 **808**
Columbus, Christopher: Death 473, funeral 469; Manatee description 415; New World voyages 666, 701
Colusa National Wildlife Refuge, Calif. 564-565, 596
Combs: Maori chiefs **544**
Communication, animal: Killer whale 231-232, 233; Sperm whale 776, 777; Weddell seal 656, 661
Computer applications: Cattle raising 204; City planning **168;** Criminology 54
Computers: Artificial intelligence 49, 52
Concord, Mass.: Abolitionists 35
Confectioners: ***Chocolate: Food of the Gods.*** By Gordon Young Nov., 664-687
Confetti (nightclub), Dallas, Texas **302-303**
Confraria do Vinho do Porto (brotherhood): Officers **467**
Connolly, Lawrence 707
Conquest of the Summit. By James D. Morrissey. July, 79-89
Conquistadores: ***Following Cortés: Path to Conquest.*** By S. Jeffrey K. Wilkerson. Oct., 420-459
Conservation: ***Do We Treat Our Soil Like Dirt?*** By Boyd Gibbons. Sept., 350-389; *see also* Wildlife refuges
Contour maps: Himalayas (mountains), Asia 74-75; Valley of Mexico, Mexico 146-147
Contour strip-cropping patterns: Iowa **390-391**
Converse, Chris 782
Cook, James **526;** New Zealand 526; Puffer (fish) poisoning 270
Coombs, David **70**
Cooper, Martha, photographer: ***Pollen: Breath of Life and Sneezes.*** Oct., 490-521
Coors, Joseph and Holly **208**
Coots: Deformed embryo **588;** Utility line fatality **571**
Coprolites 502-503, **506;** Pollen content 503, 506;
Coral jewelry **630, 631**
Coriolis force 718, 719, 725, 728
Corn: Genetic research 836, 840; Mexico 434, 439, **440-441,** storage depot **434-435,** tortillas **434;** Pollen grain size 501
Cornfields: Aerial views **390-391, 397**
Coronado, Francisco Vásquez de: Quoted 334
Correo Mayor, Calle, Mexico City, Mexico **152**
Corson, George 30
Cortés, Hernán 146, 148; Cacao beans and chocolate 666; ***Following Cortés: Path to Conquest.*** By S. Jeffrey K. Wilkerson. Oct., 420-459
Cortés, Pass of, Mexico 455
Cosimi, A. Benedict **842**
Cotton, brown **30**
Cotton production areas: Southwest (region), U. S. (1935): Map showing 326-327
Cottonwood pollen **514**
Cottrell, Comer 301
Country music: Okie influence 324, 342, 348 *see also* Haggard, Merle
Cowrie shell jewelry **606, 611, 633**
Coyne, Mick **307, 313, 315, 317, 320, 321**
Crabs: Land crab **369**
Cracknell, Gill 642, **643,** 649, 650, **657**
Craft, Ellen and William 10
Craig, William 709
Cranberry Marsh, British Columbia, Canada **584-585**
Crater Lake, Oreg.: Pollen **498-499**
Crater Lake National Park, Oreg.: Pine pollen **497**
Craver, Jean 283
Creation myths: Maoris 548, lintel depicting **548-549**
Creosote bush pollen **514**
Creticos, Peter **496**
Crick, Francis H. C. **823,** 832
Cricket & Lawn Tennis Club, Oporto, Portugal: Tea **466**
Criminology: Fiber analysis 54; Pollen analysis 496, 504, **508**
Criswell, W. A. **293,** 298
Crocker, Gary 509
Crocodiles: Arnhem Land, Australia 732, 734; India 765
Croft's (port-wine shipper) 482
Crosses: Christian **603, 627;** Tuareg **627**
Crow, Margaret **276**
Crow, Trammell **276,** 290
Cruickshank, John 52-53
Cruise ships: Grenada **692-693**
Crystal Charity Ball: Dallas, Texas 286, 292, 301
Crystal River, Fla.: ***Man and Manatee: Can We Live Together?*** By Alice J. Hall. Sept., 400-413
Cuauhtémoc, Colonia, Mexico City, Mexico 155, 158
Cuba 121; Foreign aid: Grenada 697, 709; Spanish conquest 426
Cubans: Grenada 694-695, 697, 700
Cudjoe, Lance **21**
Cullen family 44
Culloden, Scotland: Battle (1746) 48, 59, mass graves 44
Cultural anthropology: ***Africa Adorned.*** By Angela Fisher. Nov., 600-633; ***Maoris: At Home in Two Worlds.*** By Yva Momatiuk and John Eastcott. Oct.,

UMI

522-541; *South Asia, with Afghanistan and Burma; Peoples of South Asia*. Dec. supplement
Currie, James 40, 68
Currituck Sound, N. C.: Waterfowl 571, 575, 577
Cusa, Bruno 317
Cutzamala River Basin project, Mexico 149

D

DNA *see* Deoxyribonucleic acid
Dabout, Benoit **317,** 321
Dairy farming: Biotechnology applications 826, 827
Dale, Bruce: ***A Journey Down Old U. S. 1***. Dec., 790-817
Dalhart, Texas 340, 354
Dallas, Texas: ***Dallas!*** By Griffin Smith, Jr. Sept., 272-305
Charitable giving 286, 291-292, 301
Commerce and industry 274, 279, 283
Construction boom 279, 281, 282-283
Crime rate 291
Cultural and recreational facilities **288-289,** 292, **299**
Downtown **272-273,** 274, 278, 292
Education and schools 282, **298-299;** Universities **283,** 301, 304
Ethnic groups 282
Government and politics: Businessmen, leadership by 278, 279, 294; City maintenance 279, 292; Ward system 294
History 278, 279, 282, 286, 304
Kennedy assassination 278, 304
Map 279
Marketing center 274, 282, 283, 286, 290
North-south division 279, 282, 300
Population 279; Church-goers, percentage of 292; Median age 302
Public-housing projects **291,** 300, 301, 304
Racial issues 282, 301
Religion 297; Churches **292-293,** 297-300
Shopping and stores 283, 287, 294; Malls 283, 286, **294, 295;** Retail history 286-287
Size 274
Skyline **272-273, 277,** 282
Social functions **286-287;** Fund-raising events 286, 291-292, 301
Suburbs **280-281,** 282, 304
Transportation: Highways **277,** 282, 287, 300, 304; Rapid-transit system 294
Wealth 279; Average family income 279, 282, distribution map 279; Money, preoccupation with 278, 286, 290
Dallas County, Texas: Agriculture 282
Dallas Cowboys 289, 292; Head coach **288;** Wide receiver **289**
Dallas-Fort Worth metropolitan area, Texas 283, 294
Dallas Market Center, Dallas, Texas **277,** 290
Dallas Museum of Art, Dallas, Texas 292, **299**
Daniels, Ray 380
Daniels, Viola 304
Darnell, Goldie **296**
Darnley, Lord 43
DART (rapid-transit system) 294
Darwin, Australia 731, 732; Seasonal rainfall, graph showing **717**
Davidson, Charles Kemp 62
Davidson, David 283
Dávila de Bonilla, Catalina **150,** 164-165
Davis, Jefferson 16
Davis, Pete **379**
Davis Station (research base), Antarctica 643, 648, 655, 662
Daw Thein Khin 107
Day, Kenly 678
Day of the Dead (November 2): Mexico 452, 454, floral decorations **452-453**
Dealey Plaza, Dallas, Texas 278, 304
Dean, Gary 215, 217
De Baptiste, George 17
Declaration of Arbroath (1320): Reenactment of signing **50**
Decoy, giant: Canada goose **590**
Dee, River, Scotland 68
Deen, Braswell 813
Deep Drainage System (sewer), Mexico City, Mexico 144, **150**
Deer *see* Chital deer; Sambar deer; Spotted deer
Deforestation: Burma 103, 105, 107; Nepal 731, 740-741; *see also* Clear-cutting
De Jesus Fregata, Amélia 478-479
De la Madrid Hurtado, Miguel 144; ***A Scholarly President Looks at Mexico's Future***. The Editor. Aug., 175
Delaware: Slavery era 3, 15, 25; *see also* Wilmington
Delhi, India: Flooded **712-713**
Delique, Claude 686
Delmarva Peninsula: Slaves and slave hunters 27-28
Demel's pastries, Vienna, Austria **684-685**
Demography: ***The World's Urban Explosion***. By Robert W. Fox. Aug., 179-185
Denver, Colo. **201,** 202, 203, 206, **217;** Hispanic festival **200,** 201; Mayor *see* Peña, Federico; Oil boom 202-203; Population 197; Water rights 202
Deoxyribonucleic acid: ***Beyond Supermouse: Changing Life's Genetic Blueprint***. By Robert F. Weaver. Dec., 818-847
Depressions, economic: United States (1930s) *see* Great Depression
Descentecup '84 (ski meet) 253; Contestant **252**
Des Moines, Iowa: Ragweed pollen level (1983) 520
Dettifoss (waterfall), Iceland 318, **321**
Devlin, Jim 506, 508
Dewes, Koro 533, **536**
Dhows 724, 725
Diabetes: Human insulin, synthetic 824, 831, 832
Diagnostic tests: Biotechnology applications 836, **840, 844**
Diamond, Wash.: Erosion **378-379**
Diaz, Diana **517**
Díaz, Porfirio 172
Díaz Alonso, Arturo 169
Díaz del Castillo, Bernal: ***Following Cortés: Path to Conquest***. By S. Jeffrey K. Wilkerson. Oct., 420-459
Díaz de Vivar, Rodrigo (El Cid) 467, 476
Dick Smith Explorer (schooner): ***Icebound in Antarctica***. By David Lewis. Nov., 634-663
Díez, Juan 476
Dillard, Sam 324, **325**
Dinka (people): Beaded garments **606,** 606-607, **607;** Jewelry **611, 612;** Population 606
Dirt *see* Soil
Dismal Swamp, N. C.-Va.: Slaves and slave hunters 10-11
Do We Treat Our Soil Like Dirt? By Boyd Gibbons. Sept., 350-389
Dobbin, Alexander: Home **25**
Docherty, George 63
Dogon (people): Bracelet **602**
Dokuchayev, V. V. 377
Dolphins: Indian Ocean 784; *see also* Killer whale
Dom Luis Bridge, Oporto, Portugal 488
Domenzaín González, Roberto 162, 163
Domínguez, Genaro **425,** 432, **439**
Don, Mike 53
Don Quixote (Cervantes) 469, 471
Doran, John **370**
Douglas fir breeding program **504, 505**
Douglass, Frederick **12,** 17, 27, 30, 35, 39
Douro (Duero) River, Portugal-Spain: ***Iberia's Vintage River***. By Marion Kaplan. Oct., 460-489.
Basin: Area 463, 468
Boats, traditional **471, 472, 473,** 487
Bridges 469, 488
Dams 463, 468, 469, 477, 488; Locks 488
Fishing **471, 473,** 477
Gorges 463, 476, 477, 488
Hydroelectric power 463, 468, 477, 488
Irrigation 470-471
Maps 468-469
Navigational difficulties 468, 469, 485, 488
Source 463, 468
Wildlife 476, 477

Draa Valley, Morocco: Jewelry **630**
Draps, Joseph **677**
Droughts: ***Monsoons: Life Breath of Half the World.*** By Priit J. Vesilind. Dec., 712-747; *see also* Dust Bowl
D'Souza, William 739
Duck plague 587, 589; Victims **586-587**
Duck stamp, federal (United States) **582,** 586
Ducks: ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599
Ducks Unlimited: Wetlands preservation projects **584-585,** 586
Duckworth, Mary **36**
Duero River, Spain *see* Douro (Duero) River, Portugal-Spain
Dugong 402, 403
Dundee, Scotland: Industries 52-53
Dunne, Tom 381
Dunsavage, Lyn 274
Durango & Silverton Narrow Gauge train **190,** 211
Dust Bowl 271, 354, 357, 360; ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349
Dust storms: Asia, monsoonal 715, 728, 737; San Joaquin Valley, Calif. (1977) **354-355;** United States, Depression-era **322-323,** 326, 336-337, 354
Dwarfism, hypopituitary: Treatment 821, 824

E

E. coli see *Escherichia coli*
EDP (Portuguese electric company) 488
Eagles Nest Wilderness, Colo. 202
Earlimart, Calif.: Auto camp 344, **346-347**
Early, Jubal A. 35
Earthworms **373;** Castings 364, **365, 372;** Soil aeration **364-365,** 375
East Face, Mount Everest, China-Nepal: ***Conquest of the Summit.*** By James D. Morrissey. July, 79-89; ***The Forgotten Face of Everest.*** By Andrew Harvard. July, 71-77
Eastcott, Andrew and Tai 522
Eastcott, John 419; ***Maoris: At Home in Two Worlds.*** By Yva Momatiuk and John Eastcott. Oct., 522-541
Eastcott, Tara 419, 522, 540
Easton, Md.: Waterfowl Festival display **591**
Echolocation: Killer whale 232, 233; Sperm whale 776, 777, 782
Edinburgh, Scotland **42-43,** 49; Judicial center 62; Kilt fitting **45;** Pub **69;** University 49
Edisto Island, S.C.: Cassina Point Plantation (1862) **4-5**
Edwards, Mike: ***Colorado Dreaming.*** Aug., 186-219
Eiffel, Alexandre-Gustave 488
El Niño current 731
Electron micrographs: Pollen **492-493**
Electronic Data Systems Corporation (EDS) 276, 290
Electronics industry: Colorado 194; Scotland **46,** 47, 49; Texas 282
Elephants, trained: Tiger-watching 753, **753,** 758, 760
Elgin, Earl of 56, 57
Eliza Harris (character) 15, 19
Elliot, Walter 58-59
Ellis, Graeme 222-223, 226, 227, **227,** 230
Elu de Leñero, María del Carmen 158
Embryos: Deformities **588,** 589; Splitting of **826**
Embryos, human: DNA manipulation 820, 831, 832
Emperor penguins **635,** 642, **650-651,** 661, **662-663**
Enameled jewelry: Algeria **603, 631**
Endangered and threatened species: ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599; *see also* Manatees; Tigers
Endrin (pesticide): Residues in waterfowl 591
Engelholm, Sweden: Pollen products industry 508-509
Enid, Okla. 334
Enzymes: DNA manipulation 820, 831, 832; DNA replication 824
Erosion and erosion control 271; Asia, monsoonal **731,** 740; ***Do We Treat Our Soil Like Dirt?*** By Boyd Gibbons. Sept., 350-389; ***Patterns of Plenty: The Art in Farming.*** By Georg Gerster. Sept., 391-399
Escape From Slavery: The Underground Railroad. By Charles L. Blockson. July, 3-39
Escherichia coli (bacterium) 820, 824, 831, 833, 834; Fermentation vat **831**
Esperanza, Mexico City, Mexico 172
Estates and plantations: The South (region), U. S. **26,** field hands (1862) **4-5,** slave quarters, remains of **27, 28**
Ethiopia: Christian crosses **603, 627;** Silver bracelets **626**
Eunoto (Masai ceremony): Candidates **608**
Europe: ***Chocolate: Food of the Gods.*** By Gordon Young. Nov., 664-687; ***Iberia's Vintage River.*** By Marion Kaplan. Oct., 460-489; *A Traveler's Map of Spain and Portugal.* Oct. supplement; *see also* Scotland
Evans, Maurice 807
Everest, Mount, China-Nepal: ***Conquest of the Summit.*** By James D. Morrissey. July, 79-89; ***The Forgotten Face of Everest.*** By Andrew Harvard. July, 71-77
Evergreen Plantation, Wallace, La. **26;** Slave quarters **26, 27**
Evolution: Human intervention 828, 846-847
Explorers, discoverers, and navigators *see* Cortés, Hernán
Explorers Hall, NGS headquarters, Washington, D. C. 559
Extremadura (region), Spain 424
Exxon (oil company): Palynologists 505, **508;** Shale project 212, 215, 217

F

Factor, Dan **21**
Factory House, Oporto, Portugal 482
Fair: Topsfield, Mass. **802,** 803
Fairfield, John 22
Family planning: Burma, banned in 109; Developing countries 179, 182, 183; Mexico City, Mexico 144, 148, 150, 165
Fan palm pollen **514**
Fanelli, Gary 506
Fannie May kitchen, Chicago, Ill.: Candy production 678
Farm refugees: ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349; *see also* Rural-urban migration
Farm Security Administration (FSA): Historical Section photographers 334, 340
Farming: ***Patterns of Plenty: The Art in Farming.*** By Georg Gerster. Sept., 391-399; *see also* Agriculture
Farquharson, Clan 68
Faslane, Scotland: Submarine base 63
Fat Cacique (Totonac chieftain) **427,** 433
Faults, geologic: Glen Mor, Scotland 48, 55
Federal District, Mexico 146, 148; Area 164; Car thefts 171; Planning office **168;** *see also* Mexico City, *outlined*
Federal Writers' Project: State guides 340
Fédon, Julien 701
Feed lots: Colorado 194, **204;** Computer applications 204
Fermoselle, Spain **486-487**
Ferreira, House of (port-wine shippers) 482; Blending room **462;** Cellars 485
Fertility charms: Africa **606, 618**
Fertilizers: Biotechnology applications 818, 836, 837, 840; Chemical 353, 373, 375, 382, 388; Manure 372, 373, 375, 384
Fiber analysis: Criminology 54
Fiddles: Country music 324, 329, 330, **342**
Fiers, Walter **837**

UMI

Figurines, bronze: Pyu 1, **1**, 121
Findley, Rowe: ***Scotland, Ghosts, and Glory***. July, 40-69
Finland: Olympic athletes, pollen use by 496, 506
Finlay's people (legendary creatures) 55
Firewood, Pass of the, Mexico 444
Firman, Bob 510, 511, 514
First Baptist Church, Dallas, Texas **292-293**, 298
Fischer family **332-333**
Fish farming: Japan 270; Scotland **67**
Fisher, Angela: ***Africa Adorned***. Nov., 600-633
Fishermen's Birthday (festival): Grenada 702
Fishes *see* Puffers
Fishing boats: Douro River, Portugal **471, 473**
Fishing industry: Grenada 703 705, catch **704**; Japan 266, 270, *see also* Shimonoseki; Scotland 49, 54, **67**
Flach, Klaus 375, 381
Flashner, Ana 144
Fleming, Ian: Spy novels 261
Floating gardens: Aztecs 454, 456; Inle Lake, Burma 115; Xochimilco, Mexico 164
Floods: ***Monsoons: Life Breath of Half the World***. By Priit J. Vesilind. Dec., 712-747
Florida: ***Man and Manatee: Can We Live Together?*** By Alice J. Hall. Sept., 400-413; ***Man Can Save the Manatee***. By Jesse R. White. Sept., 414-418; Puffer (fish) species 268; Slavery era 9-10, 20, 22, 37, slave quarters, remains of **28**; U. S. Route 1 790, 792, 793, **816-817**, fruit stand (1922) **793**
Florida Keys, Fla.: Bridge **816-817**; Highway patrol, Prohibition-era 817
Florida Marine Patrol: Manatee conservation efforts 414, 415
Flynn, Bill 491, 514
Following Cortés: Path to Conquest. By S. Jeffrey K. Wilkerson. Oct., 420-459
Folsom, Bob 304
Fonseca (port-wine shipper) 482
Food: ***Chocolate: Food of the Gods***. By Gordon Young. Nov., 664-687; *see also* Sashimi
Food and Drug Administration (FDA): Pollen regulation 509
Foot-and-mouth virus: Vaccine development 833
Forbush, Edward Howe 583
Ford, John K. B. 230, 231, 232, **233**, 237
Fordham, Monroe 35
Forest habitats *see* Island Park, Idaho; Kanha National Park, India
Forget-me-not pollen 501
Forgey, Benjamin 554-555
The Forgotten Face of Everest. By Andrew Harvard. July, 71-77
Forster, George 270
Forster, J. Reinhold 270
Fort George, Grenada: Bloody Wednesday massacre 689, 690, bullet-pocked wall **688-689**
Fort George Island, Fla.: Slave quarters, ruins of **28**
Fort Kent, Maine: Terminus of U. S. Route 1 792
Fort Lauderdale, Fla.: Macaw and owner **814**
Forth, Firth of, Scotland **42-43**
Fossils: Coprolites 502-503, **506**; Fossil pollen 496, 501, 502, 503, 505, **506**
Fountain City, Ind.: Levi Coffin home 15, **16-17**
Fox, Robert W.: ***The World's Urban Explosion***. Aug., 179-185
Fox, Tom 529-530
Franciscans: Mexico **450**, 451, 454
Frank, Chuck **505**
Fredricksburg, Va.: Restaurant 807
Frei, Max 504, 505
Freixo de Espada à Cinta, Portugal 479
Fresno, Calif. 348
Friedman, Orrie 825
Friends, Society of *see* Quakers
Frisco, Texas 283
Front Range (mountains), Colo.: Urban areas 194, 196, high-tech manufacturing 194, 197, 203
Fronteras Nuevas, Inc. **362**
Frost, Robert: Quoted 796
Frozen Sea Expedition: ***Icebound in Antarctica***. By David Lewis. Nov., 634-663
Crew 642-643, **643, 660**; Daily life 650-651, 654-655, **660**; Diet 654-655; Polarization 642-643, 649, 650-651, 660, 662-663; Selection of 642-643
Fish diet study **649**, 661
Funding 642, 663
Goals 642, 663
Human-dynamics study 642, 650-651, 660, 663
Penguin research 642, 647, 650, 661
Plant life survey 642, **649**, 661
Seal research 642, **657**, 661
Sledges, use of 637, **640, 644-645**, 649, 651, **657**
Survival hazards 637, 642, 644, 654, 655, 660
Sea ice: Camping on **644, 646**, 654; Travel on **640, 644-645**, 648-649, 651, 655, **657**, 658, 661
Weather **644**, 645, 649, 661
Fryrear, Bill 387-388
Fuentes, Carlos: Quoted 144
Fugitive Slave Law of 1850 6, 11, 31, 38
Fugitive slaves: ***The Underground Railroad***. By Charles L. Blockson. July, 3-39
fugu see Puffers
Fuji, Mount, Japan 240, 248, **259**
Fukugen Restaurant, Tokyo, Japan 266; Owner **267**
Fulani (people): Jewelry **622-623, 624, 625**
Funerals: Ashanti 620, **620, 621**; Maori **530-531**, 531-532, 538; Ute elder 186; Wolf Pit, N. C. **810**, 811, **811**
Fungi: Soil **365**, 370; Witches'-broom 674

G

Gaffinel, Peter 682
Gaffney, Drew 283
Gairy, Sir Eric 693, 695, **698**, 699, 701, 709
Gallaway, Russel 594
Galleria Mall, Dallas, Texas 286, **294, 295**
Galunggung, Mount (volcano), Indonesia: Debris from **738-739**, 742-743
Ganges (river), India-Pakistan: Floodwaters **722-723**
García Santés, José 432, 438
Garden: Manhattan (borough), New York, N.Y. **385**
Garey, Pauline **291**, 304
Garrett, Thomas 3, **12, 24**, 29; Home 28-29
Garrett, Wilbur E. **175**
Garrison, William Lloyd **12**, 35, 37, 38
Gasper, Cheryl and Gregory **842**
Gatling, John 137A
Geensburg, Joel **802**
Geese: ***North American Waterfowl: Troubles and Triumphs***. By John Madson. Nov., 562-599; Organic farming **374-375**
Geiger, Robert 354
Genealogies: Maoris 530, **530**, 536
Genentech Inc. 820, 821, 824, 825, 827, 832, 833
Genes: Creation 831; Definition of 820, 823, 833; Mutation 825, 836; Splicing: Diagram **834**
Genetic engineering: ***Beyond Supermouse: Changing Life's Genetic Blueprint***. By Robert A. Weaver. Dec., 818-847
Genetic Systems Corporation 836
Geology *see* Pedology
Geophysics *see* Meteorology
George, Mimi, photographer: ***Icebound in Antarctica***. Nov., 634-663
George Loving Place (housing project), Dallas, Texas **291**, 301, 304
George Washington Bridge, New York, N. Y. **804-805**
George Washington University, Washington, D. C.: Cancer immunology research 833, 836
Georgia: Slavery era: Auction house **8**, fugitive slaves 10, 22; Soils 353; U. S. Route 1 813, 814, general store **794**
Geothermal springs: Vatnajökull (glacier), Iceland 306, **317**
Geranium pollen: Electron micrograph **492**

Gerónimo, San, Day of: Mexico 438
Gerster, Georg: ***Patterns of Plenty: The Art in Farming.*** Sept., 391-399
Gettysburg, Pa.: Underground Railroad station **25**
Ghana: Ashanti dancer **620, 621;** Cacao production 672, 673
Gibbons, Boyd: ***Do We Treat Our Soil Like Dirt?*** Sept., 350-389
Gilbert, Walter 832, **837**
Gilbert H. Grosvenor auditorium, NGS headquarters, Washington, D. C. 555, **560**
Gilligan, Philip **778,** 782
Glaciers: Antarctica 651, 655, 658, calving **658-659,** 660; ***Iceland's Wild Glacier-born River.*** By Paul Vander-Molen. Sept., 306-321; *see also* Kangshung Glacier
Glade, Eric 203
Glasgow, Scotland 63; Aerial view **52-53;** East End **56-57;** Economic troubles 46, 53, 57, 63; Gorbals district **57;** Orange Walk **55**
Glen Mor (fault), Scotland 48, 55
Glencoe, Scotland: Massacre (1692) 59
Glonhane, Dattu Madhu 736
Glycopeptides 649, 654
Goa, India: Rice fields **720-721, 725**
God sticks: Maoris 544, **544**
Godiva Chocolatier, Brussels, Belgium **676, 677,** 678, **681,** 682, 686
Gold strike: Colorado (1850s) 196
Golden, Colo.: Coors company picnic **208-209**
Golden eagles: Douro River, Portugal 476, 477
Goldsmith, Sharon S. 433
Golf: Scotland 40, **42-43,** 63
González, Carlos Hank 144
González, Rebeca 172
Goodrich, Joseph 23; House 17, **22, 23**
Goodwell, Okla.: Dust storm (1937) **322-323;** Museum 336-337
Goose, golden (artifact) **106**
Gophers: Great gray owl prey 126, **128, 131,** 134
Gorbals (district), Glasgow, Scotland **57**
Gordon, Albert: Gravestone **538**
Gordon, Jonathan 777, 780, 784
Gormaz, Spain: Castle 467, 469
Gorsuch, Edward 31
Gossage, Goose 200-201
Gouyave, Grenada: Beach **702-703**
Gowland, William 240
Graham, Ian 137B
Graham, Susan 674-675
Grain elevators: Holyoke, Colo. **206-207**
Grand Anse campus, Grenada **700**
Grand Junction, Colo.: Radioactive tailings 214, demolition site **215**
Grant, Ian **46**
Grant, Ulysses S.: Upside-down portrait **806,** 807
Grape growing: Portugal 474, 481-482, vineyards **470-471, 474-475, 477**
The Grapes of Wrath (Steinbeck) 324, 326; Copies burned (1940) 344; Joad family (characters) 343
Grasses: Pollen seasons, chart showing **512-513**
Grasslands (wetlands area), San Joaquin Valley, Calif. 596; Conservation easements 596, 598
Gravestones: Brown, John **34;** Bush, William **17;** Gordon, Albert **538**
Great Britain *see* Scotland
Great Depression 194, 354; ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349
Great gray owl: ***The Great Gray Owl.*** By Michael S. Quinton. July, 123-136
Attack dives **124,126**
Bathing **132-133**
Breeding season 129
Food offerings, male's **128,** 129, **131**
Habitat, destruction of 134, **134-135**
Hatchlings **131**
Hazards 134
Hearing 126
Hunting techniques 126; Attack dive 126, **126;** Listening 126, 134, **135**
Incubation term 131
Nest squatter 124
Nomad, sometime 134
Owlets **122-123,** 131, **131**
Pair bonding behavior 129, **129**
Population: North America 124
Preening 129, **129,** 132
Prey 126, **127, 128, 131,** 134
Range map 124
Size, comparative 123
Vision, long-distance 126
Great Plains, Canada-U. S. *see* High Plains
Great Sand Dunes National Monument, Colo. **218-219**
Grebes, eared **581;** Deformed embryo **588**
Greek Revival architecture: Antebellum mansion **26**
Green, Marion "Bobo" **352;** Family **352-353**
Green, Rewete **539**
Green River, U. S. 219
Greenbaum, Jim **490**
Greene, A. C. 278, 283, 294
Greer Laboratories, Lenoir, N.C.: Allergen production 501, 514; Ragweed pollen harvest **501**
Grégoire, Robert, photographer: ***Iceland's Wild Glacier-born River.*** Sept., 306-321
Gregory County, S. Dak.: Mallards **571-573**
Grenada: ***Marking Time in Grenada.*** By Charles E. Cobb, Jr. Nov., 688-710
Agriculture 701, 705, 709
Airport, international **696-697,** 709
Area 694
Capital *see* St. George's
Carnival 690, **690-691,** 693, **693**
Elections 689, 698, 699, 705, 710
Fishing industry 703, 705; Catch **704**
Flag **694**
Government, interim 699, 710
History 692, 693, 695, 701, 708
Independence from Britain (1974) 693, 701
Hotel accommodations 697, 709-710
Invasion, U. S.-led 689, 694, 695, 700; Commemorative T-shirt **709;** Helicopter fragments **695**
Map 694
Name origin 701
Nutmegs 694, 701, processing station **705**
Police force, training of 707, 708
Politics 698, 699, 701, 705, 707, 710
Population 694; Age groups 710; Literacy 701
Slavery 692, 701; Abolished (1830s) 708
Tourism 693, 709, 710
Unemployment 709
U. S. foreign aid 697, 708, 709
U. S. military presence **697,** 707-708
Youth 701, 707, 709, 710
Grenada United Labour Party 698, 701
Grenville, Grenada: Spice processing station **705**
Grettum, Gordon 571
Grettum, Roger 571
Grew, Nehemiah 501
Grinnell, George Bird 582
Grosvenor, Gilbert M.: ***Our Society Opens New Doors.*** Oct., 554-560
Groomsman (iron manikin) **14;** Underground Railroad signal 14, 15
Ground squirrels: Soil aeration **364**
Growth hormones: Laboratory synthesis 821, 824, 827
Gruys, Albert **679**
Guatemala: Archaeological site 137-137A, **137-137A;** Spanish conquest 424
Guimaraens, Bruce 482
Gurdon, J. B. 820
Gus' Place, Pueblo, Colo. 208, 210
Guthrie, Woody: Quoted 326
Guyman, Okla.: Dust storms (1933-1937) 336; Weather 336

H

Habitat destruction: Great gray owl 134, **134-135;** Manatee 402, 415, 418; ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599; Tiger 755, 763
Hadrian's Wall, England 49, 55

UMI

Haedomari Market, Shimonoseki, Japan 266, **266**
Haenga, Riwai 532
Haggard, Merle 324, 340, **342,** 345, 348
Haggis 40, **58**
Hakuba, Japan 241, 242, **250-251;** Skiers **252-253**
Hall, Alice J.: ***Man and Manatee: Can We Live Together?*** Sept., 400-413
Hall, Timothy 837
Halliday, Ebby 290, 294
Hamadaba Muhammad **629**
Hamilton, Bud 803
Hamilton, Eligah King **810,** 811
Hamilton, Lillie: Funeral **810,** 811
Hancock, Rex 566, **567;** Sons **567**
Hang gliding: San Juan Mountains, Colo.-N. Mex. **191**
Hanway, Castner 31, 35
Happo-one (ski resort), Japan 241, 242
Haratin (people): Jewelry **604**
Hardpans (soils) **350-351,** 380, 387
Hardwood swamps: Southern United States 566
Harpers Ferry, W. Va. **32-33;** John Brown's raid 14, 32-33, 35, 39
Hart, Gary **202**
Hart, Leo 345
Harvard, Andrew: ***The Forgotten Face of Everest.*** July, 71-77
Harvard University, Cambridge, Mass.: Genetic research 832, 837
Harvey, David Alan, photographer: ***Dallas!*** Sept., 272-305; ***Marking Time in Grenada.*** Nov., 688-710
Hashimoto, Kanehisa 270
Hay fever: ***Pollen: Breath of Life and Sneezes.*** By Cathy Newman. Oct., 490-521
Hayes, Harry 520
Hayes, Jim 201-202
Hayes, Mary Eshbaugh 201
Headden, Maury 381
Health-food products: Pollen pellets 506, 510
Heart disease: Biotechnology applications 825
Hecht, Theo 795
Helicopters: Grenada invasion 694, 695, fragments **695**
Hemingway, Ernest 817
Henry the Navigator, Prince (Portugal) 487; Birthplace 467, 487; Hat style **467**
Henry, Patrick: Quoted 376
Henson, Josiah **12,** 38
Hepatitis: Biotechnology applications 831, 833, **840**
Herald (Glasgow newspaper) 63
Herbal medicine: Portugal 478-479
Heredity: Role of genes 820, 828-829, 836
Herrera, César 149
Herrera, Rafael "El Kid" **173**
Herrera's (eatery), Dallas, Texas **300-301**
Hershey, Milton 681
Hershey, Pa. 674, 681, 686
Hershey Chocolate Company, Hershey, Pa. 674-675, **680-681,** 681, 686
Hershey's Kisses (chocolate candy) 675, **680-681**
Hida Mountains, Japan 240
Hickox, Johnny 814, **815**
Hiett, Cliff 214
High Plains, U. S. 354; Colorado **188-189,** 194, 196, 197; ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349; Texas: Caliche **356-357,** 387, erosion **356-357,** 360, 386-387
Highland cattle: Scotland **66**
Highland Games, Braemer, Scotland: Caber toss **60**
Highland Park, Texas 282, **286;** Churches 297, 299; Garden club meeting **286-287;** Residents **276,** 290, 296-297
Highlands (region), Scotland: Clans broken 59, 65; Fishing **67;** Livestock **64-65, 66;** Sparsity of population 40; Stag hunt **41**
Highways and roads *see* U. S. Route 1; U. S. Route 66
Higuera, Abundio 463, 473
Hikurangi (mountain), New Zealand **528**
Hilgard, Eugene 377
Hillary, Sir Edmund 75, 88, 686
Himalayas (mountains), Asia: Contour map 74-75; Geologic activity 740; Monsoons, effect on 719, 728, 741; *see also* Everest, Mount, China-Nepal
Hincherton Hayfever Helmet **490,** ***Oct. cover***
Hindu rituals: Burma **120-121;** Madras, India 740
Hispanics: United States: Festival **200,** 201; Mayors of major cities 203, **203;** Migrant laborers 344, 346, children of **346, 347**
Histamine: Allergies, role in 495, 514
History, U. S.: *Central Rockies,* The Making of America map series. Aug. supplement; ***A Journey Down Old U. S. 1.*** By Bruce Dale. Dec., 790-817; ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349; ***The Underground Railroad.*** By Charles L. Blockson. July, 3-39
Hjálmarsson, Gisli 317
Hoard, David 15, 16
Hock, Lim 730
Hodgson, Bryan 1; ***Time and Again in Burma.*** July, 90-121
Hogg, Kenneth 304
Hogue, Harold 354
Hoken-dake (mountain), Japan **238-239**
Hollinshead, Ariel 833, 836
Holmes, Zan 300-301
Holy Week processions: Zamora, Spain 476, **488**
Holyoke, Colo.: Grain elevators **206-207**
Holzhey, Steven 388
"Homage to the Indian Race" (Tamayo) **163**
Homosassa River, Fla.: Manatees 418
Honshu (island), Japan: ***The Japan Alps.*** By Charles McCarry. Aug., 238-259
Hooker, Okla. 332
Horchow, Roger 287
Horn-faced mason bee eggs **503**
Hornets Motorcycle Club **296**
Hospital de Jesús Nazareno, Mexico City, Mexico 458
Hosten, Marlene **708**
Hot springs: Japan **243,** 247; *see also* Geothermal springs
Hotaka, Mount, Japan 242, **244-245;** Climber deaths 240, 245; Major peak **245,** 248
Houia, Waldo 540
Houston, Kirby 328, 329, 330-331, 334
Houston, L. L. 830
Houston, Martha **329,** 331
Houston, Texas: Palynologists 505, **508;** Wealth 279
Howarth, Nelson 343
Howarth, William: ***The Okies—Beyond the Dust Bowl.*** Sept., 322-349
Hoyt, Erich: ***The Whales Called "Killer."*** Aug., 220-237
Hubbard, Tim 15
Hubbard Memorial Hall, NGS headquarters, Washington, D. C. **556-557, 558,** 559
Hubbs Sea World Research Institute 656
Hudson, Ohio: John Brown's house 14-15
Hudson River, N. Y. **804-805**
Huerta, Howard **198**
Hughes, Alister 708
Hukere (Maori god): Depicted **552**
Human dynamics, study of: Antarctic mixed-sex group 642, 650-651, 660, 663
Human growth hormone (HGH): In mice 818, effect **821;** Laboratory synthesis 821, 824; Wasting syndrome treatment 825
Human sacrifice: Aztecs 168, 429, 443, 445-446, victims' skulls 445, **449;** Tlaxcalans 443; Totonacs 426, 433
Humpback whales: Oil 234; Songs 784
Humphries, David **46**
Humus: Formation 370, 375; Soil 370, 375, 376, 380, 381
Hunger, world: Biotechnology solution, possible 818, 834, 837, 840-841
Hunter, John 59
Hunter, William 59
Hunting: Aboriginals (Australia) 732, 734; Big game 755, 763; Maoris 534; ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599; Stag hunt **41;** *see also* Whaling, commercial

UMI

Hunting blind: Mexico **592**
Hunting clubs: Butte Sink, Calif. 594; Currituck Sound, N. C. 575
Hybridomas 830, 836, 839, 841
Hybrids: Gene splicing 819, 820, 834, **835;** Natural occurrence 828-829
Hybritech Inc. 836, 841
Hyderabad, India: Drought 715
Hydroelectric power: Douro (Duero) River, Portugal-Spain 463, 468, 477, 488; India 728
Hydrophone recordings: Killer whale sounds 231-232, **233;** Seal songs 642, 656, **657,** 661; Sperm whale clicking **776,** 777

I

Iberian Peninsula: ***Iberia's Vintage River.*** By Marion Kaplan. Oct., 460-489; *A Traveler's Map of Spain and Portugal.* Oct. supplement
Ibo (people): Brass anklet **602**
Ice Ages: North America 376
Ice cave: Vatnajökull (glacier), Iceland **312-313, 314-315, 316**
Ice crystals: Soil expansion **369**
Ice floes: Antarctic Regions **637, 638-639,** 645
Ice skating: Galleria Mall, Dallas, Texas 286, **294, 295**
Iceberg, calving of **658-659,** 660
Icebound in Antarctica. By David Lewis. Nov., 634-663
Iceland: ***Iceland's Wild Glacier-born River.*** By Paul VanderMolen. Sept., 306-321
Idaho *see* Island Park
Idaho Springs, Colo.: Silver mine, played-out **212-213**
Identification tag: South Carolina slave (1831) **29**
Idols, pre-Columbian: Mexico **427, 431,** 433, 438-439, 441
Ignacio, Colo.: Southern Utes 213
Iguanas: Key West, Fla. **814**
Immune response 830-833, 836; Diagram **838-839;** Suppression 832, 843; Vaccines 832-833, 836
Immunex (biotechnology firm) 832
Immunoglobulin E (IgE): Allergies, role in 494, 495, 514
Immunoglobulin G: Allergy-countering factor 495, 516
Immunology: Cancer research 833, 836
Immunotherapy: Allergen shots 495, 514, 516
Immunotoxins 830-831, 843, 845
Imperial Valley, Calif. 376
India: Bee excrement **509;** Border disputes 711; ***Monsoons: Life Breath of Half the World.*** By Priit J. Vesilind. Dec., 712-747; *South Asia, with Afghanistan and Burma; Peoples of South Asia.* Dec. supplement; ***Tiger! Lord of the Indian Jungle.*** By Stanley Breeden. Dec., 748-773; Urbanization 184
Indian Ocean 724, 725; ***Rare Look at Sperm and Blue Whales: The Unknown Giants.*** By Hal Whitehead. Dec., 774-789
Indian reservations: Colorado 186, **195,** 213, 214
Indian Territory, U. S.: Black Seminoles 20, 22
Indian tiger: ***Tiger! Lord of the Indian Jungle.*** By Stanley Breeden. Dec., 748-773
Camouflage 751, **752,** 758
Cubs 754, **757, 759;** Mother's care 754, **757,** 763, 769; Nursing **762-763,** 769
Eating habits 754, 759, **759,** 768; Daily food consumption 767; Dressing of prey 767, **767**
Females: Estrus cycle 759, 761; Gestation period 754, 761; Territorial range 751; *see also* Cubs, *above*
Hunting behavior: Charging **767,** 77; Cubs, teaching of 763; Killing of prey 760, 767; Misses 750, 767, 771; Stalking 748, 750, **766,** 767, 771, 773; Territory 751
Males: Killing of cubs 754, **759;** Territorial range 751
Map of range 755
Mating 754, 759, 761, **761,** 773
Population 755
Resting **770,** 771
Territory 748, 751, 754, 759; Farmers' encroachment 769; Marked by spraying 748, **758, 759;** Range 751
Transients 751, 761
Water holes 754, **756-757,** 760, 767, **772**
Indiana: Underground Railroad sites 15, **16-17**
Indians of North America: Colorado 186, **195,** 213, 214, 218, 219; ***Following Cortés: Path to Conquest.*** By S. Jeffrey K. Wilkerson. Oct., 420-459; Fugitive slaves, friends of 9-10, 20, 22; Oklahoma 324; Pollen use 496, 518, **518,** 520; *see also* Aztec Indians; Maya Indians
Indonesia: Population redistribution 743; Summer monsoon 725; Urbanization 184; Winter monsoon 716, 722, 730
Ingrid Christensen Coast, Antarctica: ***Icebound in Antarctica.*** By David Lewis. Nov., 634-663
Inle Lake, Burma 115
Insulin, human: Synthesis 824, 831, 832
Inter-American Development Bank: Mexican water project 149
Interferons: Cancer treatment 831, 837; Cloning of 831, 837; Experimental uses 831-832
International Union for Conservation of Nature (IUCN): Whale research funding 777, 784
International Whaling Commission: Blue whale protection 787; Killer whale protection 236; Whaling moratorium 784
Interstate 40 342, 343
Interstate 95 792, 795, 813; Map 792
Interstate Highway System 793, 809; Limited accessibility 792, 795; U. S. Route 66, replacement of 338, 342
Iona (island), Inner Hebrides, Scotland 44, 48
Iowa: Erosion 361, 382; Farm **390-391;** Loess 380, 382; Soil conservation funding 382; Wetlands, loss of 566
Irrawaddy River, Burma 99, 115, 117
Irrigation: Arizona **394-395;** Burma 101, 105; Colorado 189, salt strangulation **362;** Panhandle (region), Texas 354; San Joaquin Valley, Calif. 588, 589-590, 596; Spain 470-471, research 473
Islam: Veiling of women 604, **605**
Island Park, Idaho: ***The Great Gray Owl.*** By Michael S. Quinton. July, 123-136
Ito, Haruo 268
Itonaga, Masayuki 243
Ivory Coast: Cacao production 669, **670,** 672-673, **672-673,** 668, 674; Fortuneteller's tools **617;** Jewelry **602, 618, 623**
Ixhuacán de los Reyes, Mexico 429, 441
Ixtacamaxtitlan, Mexico 425, 445
Iztaccíhuatl (volcano), Mexico 455
Iztapalapa (market complex), Mexico City, Mexico 165, 168

J

J. S. Fry and Sons: Chocolate candy, invention of (1847) 678
Jackrabbits 331, 334, **348,** 349; As food 334, 348
Jackson, Tenn.: Loess 371
Jacob, Thomas 740
Jacobs, Adolphus **708**
Jacobs, Jane 148
Jade: Maori pendants **551;** South Island, New Zealand 551
Jaguar, stone: Mexico **431,** 439, 441
James Bond (character) 261
James Keiller & Son, Ltd., Dundee, Scotland 53
Japan: Border dispute 711; ***The Japan Alps.*** By Charles McCarry. Aug., 238-259; Monsoons 725; Pear tree pollination **502-503;** ***The Preposterous Puffer.*** By Noel D. Vietmeyer. Aug., 260-270; Whaling 784
Japan Alps, Japan: ***The Japan Alps.*** By Charles McCarry. Aug., 238-259
Accommodations 243, 245; Hut **244;** *see also* Ski resorts, *following*
Guides 240, 241, 242
Highest peak 248, 258

UMI

Hot springs **243,** 247
Inns 243
Location map 241
Mountain climbers: Deaths 240, 245, 248; Elitism, former 240, 241
Plants 249, 256
Ranges 240
Shrines 240, 242, **246, 254-255**
Ski resorts 241, 242, **250-253**
Wildlife 243, 248
Japan Alps National Park 243, 251
Japan Guide (Gowland) 240
Japanese army: Ski-troop training 241-242
Japanese verse 261, 270
Java (island), Indonesia: Monsoon rains **742-743,** damage from **738-739,** 742-743
Jefferson, Thomas 807; Quoted 806
Jenny, Hans 377, 380
Jewelry: ***Africa Adorned.*** By Angela Fisher. Nov., 600-633; Aztecs 420, **421**
Jóhannsson, Gudbrandur **317**
Johns, Chris, photographer: ***The Okies—Beyond the Dust Bowl.*** Sept., 322-349
Johnson, Abel 744
Johnson, Mrs. Alston 694
Johnson, Peter 54
Johnstone Strait, British Columbia, Canada: ***The Whales Called "Killer."*** By Erich Hoyt. Aug., 220-237
Jojoba pollen **514**
Jökulsá á Fjöllum (river), Iceland: ***Iceland's Wild Glacier-born River.*** By Paul Vander-Molen. Sept., 306-321
Jökulsárlón (lake), Iceland **309**
Jonsson, Erik 278, 294
Jordan, Robert **700**
Joseph, Cheryl **693**
Joseph, Julius 716, **716,** 717, 722, 728, 730, 736
Joseph Goodrich house, Milton, Wis. 17, **22, 23**
A Journey Down Old U. S. 1. By Bruce Dale. Dec., 790-817
Juana la Loca, Queen (Spain) 473
Juárez, Benito 160
Junagadh district, Gujarat (state), India: Floods 744

K

Kabyle (people): Enameled jewelry **603, 631**
Kachel, Joan 337
Kachin State, Burma: Communist rebels 98; Deforestation 107
Kaifeng, China **737**
Kalidasa: Quoted 716
Kamga II (Bamileke king) 614
Kamicochi, Japan 243, 247
Kaminoyu, Japan: Hot springs 247
Kangshung Face, Mount Everest, China-Nepal: ***Conquest of the Summit.*** By James D. Morrissey. July, 79-89; ***The Forgotten Face of Everest.*** By Andrew Harvard. July, 71-77
Kangshung Glacier, Tibet (autonomous region), China 72, 76, **82-83**
Kanha National Park, India: ***Tiger! Lord of the Indian Jungle.*** By Stanley Breeden. Dec., 748-773
Kansas: Farm **396-397;** Okies 326
Kansas Territory: Slavery issue 6, 14, 32, 35
Kapaleeswarar (Hindu temple), Madras, India 740
Kapitan Markov (cargo ship) 648
Kaplan, Marion: ***Iberia's Vintage River.*** Oct., 460-489
Karen National Liberation Army: Guerrilla warfare 113; Soldiers **112, 113**
Karens (people) 98, 100; Refugees 113, **114-115**
Karjat, India: Drought (1983) 736
Karnataka (state), India: Drought (1983) 728
Kassena (people): Ancestor worship 616; Bracelet **616**
Kathmandu, Nepal: Ceremonial bathers **729**
Katz, David 516
Kaw Moo Rah, Burma **112, 113**
Kawashima, Michiyo **267**
Kayaking: ***Iceland's Wild Glacier-born River.*** By Paul Vander-Molen. Sept., 306-321
Kemp, Arnold 63
Kemp, John 837
Kemp, Romaine **62**
Kennedy, John F.: Assassination 278, 304
Kenneth I MacAlpin, King (Scotland) 49, 55
Kenton, Okla. **330-331**
Kentucky: Fugitive slaves 15, 19
Kentucky bluegrass **512**
Kenya: Body adornment: Masai **608,** 609, **609,** Pokot **632,** Rendille **610,** 610, **611**
Kerala (state), India: Capital *see* Trivandrum; Drought (1983) 718, 736; Monsoon rains, arrival of 740, 744
Kern County, Calif. 338, 343, 345
Kersey, John 830
Kesterson National Wildlife Refuge, Calif. 596; Bird embryo deformities **588,** 589; Evaporation ponds **588-589,** 590; Selenium build-up 588, 589, 590
Kettles *see* Potholes
Key West, Fla.: Resident **814;** U. S. Route 1 790, 792, 817
Kharta, Tibet (autonomous region), China 73, 76
Killer whale: ***The Whales Called "Killer."*** By Erich Hoyt. Aug., 220-237
Birthrates 228, 234, 236, 237
Bulls 227, 228, 230, 236
Communication sounds 231-232, 233
Communities 227, 230, 231; Ranges 223, 230, 231; Transient 223, 230, 231, 233
Core areas 228, 232, 234, 237
Cows 234, 236; Maturity, age of 228, 230, 236
Diet 223, 224, 227, 231
Echolocation 232, 233
Eyes 231, **231**
Hydrodynamic shape **234-235,** 235
In captivity 223, 226, 232, **236,** 237, **237**
Length 222, 228
Life expectancy 227, 230
Man-eater legends 221, 222-223, 226
Mortality rate 234, 236
Pods 222, 227, 228, 230-231; Dialects 231, 232, 233; Structure 236-237; Superpods 228, 231
Population, world 234
Protected status 236
Research 226-227, **227,** 230, 231, 232, **233,** 237
Rubbing beaches **228-229,** 234
Weight 222, 228
Kilmarnock, Scotland: Robert Burns supper 68
Kilt fitting: Edinburgh, Scotland **45**
King, Lauriston R. 798
King, Marian and Sarah **681**
King, Martin Luther, Jr. **37, 38**
Kingan, Ross **537**
Kingman, Ariz. 343
King's Caves, Island of Arran, Scotland 56
Kipling, Rudyard: Quoted 715
Kiso Mountains, Japan 240
Kita-dake (peak), Mount Shirane, Japan 248-249, 258; Altitude 248, 258; View from **258-259**
Kitagawa, Tamotsu 263, 266
Klaus, Wilhelm 504
Knight, Cora **518**
Knitting: Scotland 62, co-op 54
Köhler, Georges 830
Kopczynski, Chris 84
Koregaon, India: Drought (1983) 736
Koshima, Kaneharu **264**
Koulango (people): Pendant **618**
Kramer, Gary 596
Krill: Blue whale food 787, 788
Krishna River, India 739
Krön, Tom 678
Kuchenberg, Dan **695**
Kuthodaw Pagoda, Mandalay, Burma **119**
Kyaukse, Burma: Agriculture 105

L

Labor, migratory: ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349
Lagoaca, Portugal 477-478, **478-479**
Lagos, Nigeria 179
Lagunes, Julio 432, 434, **439**
Laib, Wolfgang **519;** Pollen art **518-519**
Lake Andes National Wildlife Refuge, S. Dak.: Duck plague 589,

victims **586-587**
Lake Placid, N.Y.: John Brown's farmhouse and grave **34**
Lakeside Drive, Highland Park, Texas 282, **286**
Lalibela, Ethiopia: Christian cross **603**
Lamb, John 709
Lambert, William 17
Lamm, Richard D. 202
Lamont, Calif. 349
L'Amour, Louis **209**
Land crabs **369**
Landfills: Grand Junction, Colo.: Radioactive tailings 214, 215; Nebraska **383**
Landry, Tom **288**
Landslides: India 746; Nepal 731, 741, 746
Lange, Dorothea 340; Photograph by **326-327**
Laos: Monsoon rains 727
Larimer Square, Denver, Colo. **200**
Larsemann Hills, Antarctica 648, 661; Seal research 656
Larson, William 361, 382
Las Casas, Bartolomé de 454
Las Colinas, Texas 290
Laser applications: Data storage systems 203; Oil industry **46;** Profiling system 53
Laser industry: Scotland 52-53
Latin America: Tallest building 148; Urban population 184; *see also* Guatemala; Mexico
Lawnside, N.J.: Still family reunion **10-11,** 30
Lawrence, Kansas 14
Lead poisoning: Waterfowl 590, 593, 594, victims **594**
Leadville, Colo. 195, 199
LeBien, Tucker 830
Lee, Jean 340
Lee, Owen: Quoted 222
Lee, Robert E. 33; Quoted 35
Lee, Russell **334,** 340, 342; Photograph by **334-335**
Leixões, Portugal 464, 485
Lenoir, N.C.: Ragweed pollen harvest **501**
Leopard seals 652, 653, 654, **654, 655,** 661
Leopold, Luna 361
Leroi-Gourhan, Arlette 496
Leukemia: Monoclonal antibody treatment 830, 843
Lewis, Cudjo 31; Bust **31**
Lewis, David: ***Icebound in Antarctica.*** Nov., 634-663
Lewis, Walter 509
Liberación Proletaria (subdivision), Mexico City, Mexico 160, 162
Liberty Hill, Ripley, Ohio: Underground Railroad station **18, 19**
Library of Congress, Washington, D.C.: Depression-era photographic archive 334, 340, 342, photographs from collection **326-327, 334-335**
Lichens **366;** Antarctica 642, **649,** 661
Life of a Forest Hunter: The Great Gray Owl. By Michael S. Quinton. July, 123-136
Limón, Irma and Pascual **436**
Lincoln Avenue, Steamboat Springs, Colo. **193**
Lincoln Memorial, Washington, D.C. **38**
Lindow, Steven E. 846-847, **847**
Lindt, Rodolphe 682
Lindt & Sprüngli (chocolate company), Zürich, Switzerland 682, 686
Linhares, Portugal: Seamstresses **480**
Lintel, wooden: Maori meetinghouse **548-549**
Linton-Smith, Norman 643, **643,** 649, 650, 660, 662
Lip plug, aluminum **632**
Liver cancer: Vaccine 833
Liver cutter (Maori weapon) **545**
Livestock slaughtering program, Depression-era 194, 338
Livingstone, David 44
Lobi (people); Ancestor worship 616, altar **617**
Loch Ness monster 48, 55, 63, 66
Loess: Soil 358, 371, 376, 377, 380, 381, 382
Logsdon, Gene **372**
Loguen, Jermain **12**
Lomond, Loch, Scotland 40, 66, 68
London, England 686; Chocolate drinking (1700s) 668
Long, Charlie **590**
Longwood Meetinghouse, Kennett Square, Pa. 23, 27
Loons, common **574-575;** Floating nests for **574;** Protection of 574
Lopez, Hector **804**
Lost wax casting process 618; Bronze ornaments **618, 619;** Gold ornaments **623**
Louisiana: Plantations **26,** 30, slave quarters **26, 27**
Louisiana Purchase (1820) 6
Louison, George **698,** 705, 707
Lowe, George 79, **81,** 88
Lowe Buttress, Mount Everest, China-Nepal: ***Conquest of the Summit.*** By James D. Morrissey. July, 79-89
Lower East Side, Manhattan (borough), New York, N.Y.: Garden **385**
Luis Palomar, José 466, **489**
Lung cancer: Vaccine 833, 836
Lymphokines: Immune system regulation 832
Lynch, Pat 54
Lynn County, Texas: Windstorm aftermath **356-357**
Lyons, Ga.: Onion picker **797**

M

M Street Building, National Geographic Society: ***Our Society Opens New Doors.*** By Gilbert M. Grosvenor. Oct., 554-560
MABs *see* Monoclonal antibodies
Maass, David A. **582**
MacAskie, Ian B. **227,** 230
Macaw: Fort Lauderdale, Fla. **814**
McCarry, Charles **238;** ***The Japan Alps.*** Aug., 238-259
McClintock, Barbara 840
MacCourt, Iain and Nancy 44
McCurry, Steve, photographer: ***Monsoons: Life Breath of Half the World.*** Dec., 712-747
McDaniel, Wilma Elizabeth 340, 344-345, **345;** Poetry 343, 344
MacDonald, Alasdair MacIain 59
McDowell, Bart: ***Mexico City: An Alarming Giant.*** Aug., 138-175
MacGregor, Robert 59, 68
McKnew, Thomas W. 556
MacLeod, Roddie 40
McMahon, David **58**
McNeese, "Uncle Mac" 795
Macon County, Ga.: Erosion **379**
Madras, India: Drought (1983) 715, 739-740; Gales 722; Seasonal rainfall, graph showing **717**
Madras Metropolitan Water Supply and Sewerage Board, Madras, India 739, 740
Madson, John: ***North American Waterfowl: Troubles and Triumphs.*** Nov., 562-599
Maeshowe (tomb), Orkney Islands, Scotland 51; Norse inscriptions **51**
Magellan, Ferdinand: Birthplace 487
Mahanadi River, India: Aerial view **724**
Maharashtra (state), India: Drought 715, 736-737
Maine: U.S. Route 1 790, 792-793, **798-799,** garage **794-795;** Winter severity 798
"The Making of America" map series: *Central Rockies,* Aug. supplement
Malaysia: Monsoons 730
Malcolmson, Laura **62**
Maldive Islands: Monsoons 717
Malheur National Wildlife Refuge, Oreg.: Trumpeter swans **562-563**
Mali: Jewelry: Bronze bracelet **602,** Fulani gold earrings **622-623, 625,** Songhai hair ornaments **600-601,** Tuareg ornaments **629**
Malinalli *see* Marina
La Malinche (peak), Mexico 448
Mallards 566, **572-573, 598-599;** Duck-plague victims **586-587;** Tagging of unhatched duckling **576**
Mallory, George 71, 76; Death 76; Journals 76, quoted 76
Malls, shopping: Dallas, Texas 283, 286, **294, 295**
Malthus, Thomas 182
Manatees: ***Man and Manatee: Can We Live Together?*** By Alice J. Hall. Sept., 400-413; ***Man Can Save the Manatee.*** By Jesse R. White. Sept., 414-418

UMI

Mandalay, Burma 90, 107, 109, 114, 118; Buddhist monasteries **118-119;** New Year celebration **90-91;** Shop signs **97;** Teak logs **102-103**
Manganese deposits: Colorado 211
Mangbetu (people): Hairstyles 612, hairpins **612**
Manhattan (borough), New York, N. Y.: Demolition site **384;** Garden **385;** Skyline **804-805**
Maningrida (Aboriginal settlement), Arnhem Land, Australia 732, 736
Mannequin, duck-headed: Easton, Md. **591**
Manteca, Calif.: Almond tree pollen collection **500,** 509, 510, 511, 514
Manuel, Puke **534**
Manuel Cardosa, José 479
Manure: Fertilizer 372, 373, 375, 384
Maori 28th Battalion (World War II) 526, **527,** 532, 538, 540; Veteran's gravestone **538**
Maoris: ***Maoris: At Home in Two Worlds.*** By Yva Momatiuk and John Eastcott. Oct., 522-541; ***Maoris: Treasures of the Tradition.*** By Douglas Newton. Oct., 542-553
Agriculture 532 *see also* Ranching, *below*
Arts 542 *see also* Sculpture, *following*
Celebrations and ceremonies: Anzac Day **538-539;** *huis* 522, 524, 525, 529, 540; *see also* Funerals, *below*
Character 529, 530, 532, 540; Wariness of whites 522, 525, 529, 539
Cultural revival 526, 533
Food 525, 532, **533, 534,** 539
Funerals **530-531,** 531-532, 538; Chiefs 553, bone chests **552, 553**
Genealogies 530, **530,** 536
History 526, **526-527;** Polynesian migrations 522, 526, map 526; World War II 526, **527,** 532, 538, 540
Language 522, 525, 532, 540
marae (ceremonial gathering places) 524-525, **529;** Dining halls 524, 525, **529;** Kitchens 532, **534;** Meetinghouses 522, 524, **530-531,** 531-532, lintel **548-549**
Oral tradition 526, 529, 530, 532, 536
Population 522, 524
Ranching 529, 536, **536;** Sheep 524, **536-537**
Religion 544; Creation myth 548, **548-549;** Gods 542, 544, 548, 549, 553, sculpture **544, 548, 552, 553**
Rituals 544, 545; Battle posturing 526, **526,** 540; *see also* Funerals, *above*
Sculpture **542-543;** Ancestors 542, **543;** Bone chests **552, 553;** Canoes **546-547;** Origin myth 542; Pendants **550, 551;** Sacredness 542, 544
Tribes, number of 522, 524
Warrior tradition 526, 540, 542; *haka* **526,** 540; Weapons **545**
Map supplements: *Central Rockies,* The Making of America series. Aug. supplement; *South Asia, with Afghanistan and Burma, Peoples of South Asia.* Dec. supplement; *A Traveler's Map of Spain and Portugal.* Oct. supplement
Maps:
Africa 602-603; Monsoon regions 716-717
Animal ranges and habitats: Great gray owl 124; Manatees 403; Tigers 755; Waterfowl migration, breeding areas, and wintering areas 570
Antarctic Regions: Frozen Sea Expedition 636
Asia: Burma located 100; Monsoon regions 716-717; *South Asia, with Afghanistan and Burma; Peoples of South Asia.* Dec. supplement; Tiger range 755
Burma 100
Caribbean region: Grenada located 694
Colorado 196-197; Minerals 197
Dallas, Texas 279
Douro (Duero) River and basin, Portugal-Spain 468-469
Europe: Chocolate consumption, distribution of 668
Grenada 694
Himalayas (mountains), Asia: Contour map 74-75
Iberian Peninsula: Douro (Duero) River located 468; *A Traveler's Map of Spain and Portugal.* Oct. supplement.
Iceland: Vander-Molen expedition route 308
India: *South Asia, with Afghanistan and Burma; Peoples of South Asia.* Dec. supplement
Indian Ocean: Frozen Sea Expedition 636; Sperm whale study area 776
Japan: Japan Alps located 241
Mexico: Mexico City located 147; Route of Cortés 424-425
Mexico, Valley of, Mexico: Contour map 146-147
Mexico City, Mexico 146-147
North America: Great gray owl range 124; Waterfowl migration corridors, breeding areas, and wintering areas 570
North Sea oil fields 49
Pacific Ocean: Polynesian migration routes 526
Rocky Mountains, Canada-U. S.: *Central Rockies,* The Making of America series. Aug. supplement
Scotland 48, 49
Southeast (region), U. S.: Manatee range 403
United States: Cotton production areas (1935), Dust Bowl, major highways, paved and unpaved (1935) 326-327; Erosion problem areas 358; Slavery distribution and density (1860), Underground Railroad 6-7; Soil groups 358-359; U. S. Route 1 792
Vancouver Island, British Columbia, Canada: Killer whale research areas 223
World: Cacao bean production, chocolate consumption 668-669; Cities with 5 million residents 181; Manatee range 403
Marcus, Herbert 287
María Arenaz, Angel 476
Maria Theresa *taler* (Austrian coin) **627**
Marina (Aztec princess) 433, 444, 446, 448, 454, 458; Paintings **445, 459**
Marine biology *see* Manatees; Puffers (fish); Whales
Marine mammals sanctuaries: ***Man and Manatee: Can We Live Together?*** By Alice J. Hall. Sept., 400-413; ***Man Can Save the Manatee.*** By Jesse R. White. Sept., 414-418; ***Rare Look at Sperm and Blue Whales: The Unknown Giants.*** By Hal Whitehead. Dec., 774-789
Markets: Mexico City, Mexico 144, **152,** 158, 164, 165, 168; Oporto, Portugal **464;** Zautla, Mexico 444
Marking Time in Grenada. By Charles E. Cobb, Jr. Nov., 688-710
Maroon Bells (peaks), Colo. **190;** Aspens **216**
Marriage customs: Ait Hadiddou 631; Burma 101; *see also* Wedding customs
Marsh, David 516
Marshes: ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599
Martínez Manautou, Jorge 165
Mary, Queen of Scots 43
Mary Kay Cosmetics, Inc., Dallas, Texas 285, 290; Saleswomen **284-285**
Maryland: Slavery era 3, 22, 31, 37; Soil 363, 376; Underground Railroad 22, 27, 28, 37
Masai (people): Body adornment: Chalk **608,** lion-mane headdresses **608, 609**
Masciotra, Freddy 208
Mason-Dixon Line 22; Boundary marker **7**
Massachusetts: Underground Railroad 35, 37; U. S. Route 1 **800-801, 803,** autumn foliage **790-791**
Massachusetts Bay Colony: Chocolate factory 669

UMI

Massachusetts General Hospital, Boston, Mass.: Hepatitis detection **840**
Mast cells: Allergies, role in **494, 495,** 514
Mataira, Carol **533**
Matsumura, Hisashi 266, 268
Maugham, W. Somerset: Quoted 92
Mauritania: Moorish women **628;** Silver pendant **628**
Maya Indians: Art and artifacts 137A-137B, **137A, 137B;** Battle with Cortés 426, 433; Skeleton 137, **137A;** Slaves 433
Mayhew, Richard 30
Maymyo, Burma: Arboretum 105; British occupation 105, 111; Buddhist nuns **110-111**
Maze, Stephanie, photographer: ***Iberia's Vintage River.*** Oct., 460-489; ***Mexico City: An Alarming Giant.*** Aug., 138-175
Mazouco, Portugal **482-483;** Paleolithic art 479, 482
Medellín, Spain 424
Medicine and health: ***Beyond Supermouse: Changing Life's Genetic Blueprint.*** By Robert A. Weaver. Dec., 818-847; Chocolate 674, 683, 686; Poisonous fish *see* Puffers; ***Pollen: Breath of Life and Sneezes.*** By Cathy Newman. Oct., 490-521; Population, effects on 179, 182, 183
Meek, John W. **814**
Megagoose (giant decoy) **590**
Melville, Herman: Quoted 781, 784
Melville Bell Grosvenor Building, NGS headquarters, Washington, D. C. **555, 558-559,** 559; Architect 555, 559
Meneses, Padre 454
Menino Jesus da Cartolinha (image of Christ) 480
La Merced (food market), Mexico City, Mexico 165
Merganser, red-breasted **580-581**
Merrill, Brett **377**
Merrimack River, Mass.-N. H. **803**
Mesa Verde National Park, Colo.: Ute Mountain Utes 213
Meselson, Matthew 509
Meteorology: ***Monsoons: Life Breath of Half the World.*** By Priit J. Vesilind. Dec., 712-747
Metro (subway system), Mexico City, Mexico **142-143,** 144, 152-153, 155
Metternich, Clemens von, Prince (Austria) 682, 685
Mexica *see* Aztec Indians
Mexican immigrants: United States 175, 210
Mexican Revolution (1910-1911) 163, 172, 175, 436, 441; Church-state tension 451; Land redistribution 436, 443
Mexicano (dialect) 164, 438
Mexico: Cacao harvester's child **671;** Chocolate beverage **667;** ***Following Cortés: Path to Conquest.*** By S. Jeffrey K. Wilkerson. Oct., 420-459; Hunting blind **592;** ***Mexico City: An Alarming Giant.*** By Bart McDowell. Aug., 138-175; ***A Scholarly President Looks at Mexico's Future.*** The Editor, 175; Monsoon 718; Seminole freedmen 20
Mexico, Gulf of: Mississippi River sediment 361; Shore **422-423**
Mexico, Valley of, Mexico 149, 424; Contour map 146-147
Mexico City, Mexico:
Mexico City: An Alarming Giant. By Bart McDowell. Aug., 138-175; ***A Scholarly President Looks at Mexico's Future.*** The Editor, 175
Aerial view **140-141**
Air pollution 144, 148, **154,** 155
Aztec heritage 148, 164, 165
Births 158; Birthrate, lowered 139; Deliveries by midwives 150, 165
City planners 139, 144, 149, 150; Computer use **168**
Crime 148, 158, 164; Auto thefts 148, 171; Black-marketing 152, 164
Demonstrators 165, 172, **174,** 175
Factories 144, 148, 149, 155, 159; Fuel burned 155
Housing 139, 144, 150, **151;** Caves 162, 172; Irregularities 149; Sewerage, inadequate 150, 159; Squatters 149, 162-163
Map 146-147
Markets 144, **152,** 158, 164, 165, 168
Mass transit 148, 153, **154, 155;** *see also* Subway, *below*
Midwives **150,** 164-165
Motor vehicles: Air pollution caused by 148, **154,** 155; Automobiles 148, 153, repair shops **153, 170-171,** thefts 148, 171; Number of 144
Population 139, 144; Density: Positive aspects 148; Percentage of all Mexicans 147; Projections 144, 147
Rural immigrants 139, 144, 158, 164, 175
Sewerage system 144, **150;** Inadequacies 150, 159
Slums 144, 162-163, 172
Social services 139, 163, 175
Street life 144, 148, **152-153,** 155, 158; Fire-eaters **145,** 148; Mimes 158-159
Subsidence 144, 146, 149, 152, 161
Subway **142-143,** 144, 152-153, 155
Unemployment 144, 148, 168
Urban expansion 140; Map showing 146-147
Vendors 144, 148, **152, 153,** 155, 165
Water supply 144, 146, 149, 150, 159
Weather and climate 148, 149, 152
Population increase 180
United Nations World Population Conference 179
see also former name, Tenochtitlan
Miami Seaquarium, Miami, Fla.: ***Man Can Save the Manatee.*** By Jesse R. White. Sept., 414-418
Mice: Genetic manipulation of 818, 821, 836, "supermouse" 818, **821;** Monoclonal antibody production 836, 839, **841**
Michaud, Sam **792**
Michie, Donald 49, 52
Michigan: Underground Railroad agents 17
Microchip industry: Scotland 44, 49
Midwives: Mexico City, Mexico **150,** 164-165
Migrant laborers: ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349
Migration: ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599
Migrations, human: Polynesians 522, 526, map 526; Westward migration (U. S. history) *see* Okies, *outlined; see also* Rural-urban migration
Migratory Bird Treaty (1918) 582
Miketa, George, Sr., and Mildred 210
Milk chocolate, invention of 669, 681, 686
Miller, James 643, **643, 645, 654,** 649, 650, 660, 662
Millich, Arlene 214
Milner, Kawhia 540
Milo field: Oklahoma **332-333**
Milpurru, George **734, 735**
Milstein, Cesar 830
Milton, Wis.: Underground Railroad site 17, **22, 23**
Mindon, King (Burma) 118
Mingaladon Airport, Rangoon, Burma 94
Mining *see* Colorado, *outlined*
Minnedosa pothole country, Canada 567
Miranda do Douro, Portugal 473, 479-480
Mississippi: Mud sample **367;** Slavery era 37, fugitive slaves 16, slave inventory (1849) **29**
Mississippi River, U. S.: Erosion 361; Underground Railroad route 16, 27
Mississippi Valley, U. S.: Erosion 380
Missouri: Okies 326
Missouri Compromise of 1820 6
Missouri River, U. S.: Erosion 361
Mistletoe pollen **514**
Mites: Soil aeration **365, 370**
Mixquic, Mexico 456

Mixtec Indians: Chocolate use **666**
Mnabe, Mr. 725
Mobley, George F., photographer: ***The Japan Alps***, Aug., 238-259
Moby Dick (Melville) 781
Moctezuma II (Aztec ruler): Chocolate consumption 666; ***Following Cortés: Path to Conquest***. By S. Jeffrey K. Wilkerson. Oct., 420-459
Moe, Leroy H. **814**
Moei River, Burma-Thailand **114-115**
Mohammed, Dewan 740
Mojave Desert, Calif. 343
Molecular biology: ***Beyond Supermouse: Changing Life's Genetic Blueprint***. By Robert F. Weaver. Dec., 818-847
Moles: Soil aeration **365**
Molybdenum: Mining 195; Steel hardener 195, 196
Momatiuk, Yva 419; ***Maoris: At Home in Two Worlds***. By Yva Momatiuk and John Eastcott. Oct., 522-541
Momb, Kim **81**, 84, 88
Mombasa, Kenya: Dhows 724-725; Seasonal rainfall, graph showing **716**
Monasteries: Calpan, Mexico **450, 451**, 454; Mandalay, Burma 109, **118-119**; Xegar, Tibet (1922) **77**
Monfort Feed Lots, near Greeley, Colo. **204**
Mongoose Gang 699, 701, 705
Monks, Buddhist: Initiation ceremony **108, 109**
Monoclonal antibodies: ***Beyond Supermouse: Changing Life's Genetic Blueprint***. By Robert F. Weaver. Dec., 818-847
Monsoons: ***Monsoons: Life Breath of Half the World***. By Priit J. Vesilind. Dec., 712-747
  Causes 718, **718-719**, 719, 722
  Celebrations 721, **726-727, 729**, 739, 747
  Defined 716, 722
  Droughts, seasonal **714-715**, 715, 717, **725**, 728, 730, 731, 732, 736-737, 739-740
  Dust storms **714-715**, 715, 737; Frigid 728, 737
  Economic importance 716, 717, 721, 728, 730
  Erosion caused by **731**, 740-741
  Floods caused by **712-713, 722-723, 724**, 727, **738**, 739, **741**, 744, 746, **746-747**, ***cover***; Damage from **738-739**, 739, 744
  Poetic descriptions 716, 726, 744, 747
  Rains, seasonal **712-713**, 716, 717, **720-721**, 731, 732, **732, 733, 735, 742-743**, 744, 746; Causes **718**, 719, 722
  Regions affected 716-717, **718-719**; Map 716-717
  Studies 722, 724
  Summer (southwest) monsoon 716, 722, 725, 727-728, 730; Diagram **718-719**
  Unpredictability 716, 717, 722
  Winter (northeast) monsoon 716, 722, 728, 730, 737; Diagram **719**
  Word derivation 716, 724
Monsoon Experiment of 1978-1979 (MONEX) 722, 724
Moors (people): Ancestry 628; Dancer **628**
Morais, Jorge 477
Morales, Rafael 137B
More, Jerry **205**
Moreno, Mario 158-159
Moreno, Tracy **821**
Moro, Aldo: Kidnapped 504
Morocco: Jewelry: Amber **602**, silver coin **604, 627, 630**; Marriage festival 631, participant **630**
Morris, William C.: Painting by **582**
Morrissey, James D. 77; ***Conquest of the Summit***, July, 79-89
Moss, Delmar **206**
Mother Bethel African Methodist Episcopal Church, Philadelphia, Pa. 30
Motor trikes **348, 349**
Motor trips: ***A Journey Down Old U. S. Route 1***. By Bruce Dale. Dec., 790-817; ***The Okies—Beyond the Dust Bowl***. By William Howarth. Sept., 322-349
Motorboats: Manatee injuries 400, **400**, 414, 415
Motorcycle policemen: Prohibition era **792, 816**
Mott, Lucretia Coffin **12**, 30, 31
Mountains and mountain climbing: ***Conquest of the Summit***. By James D. Morrissey. July, 79-89; ***The Forgotten Face of Everest***. By Andrew Harvard. July, 71-77; ***The Japan Alps***. By Charles McCarry. Aug., 238-259; *see also* Rocky Mountains, Canada-U. S.; Sierra Madre Oriental, Mexico
Mrejen, Jean Jacques 317
Muggers (crocodiles): India 765
Muhammad, Hamadaba **629**
Mulberry trees: Tucson, Ariz. **515**, 520
Mule deer: Colorado 217
Mules **439**, 445
Murals: Mexico City, Mexico **162, 163**; Tlaxcala, Mexico **445**
Murray, Virginia Lynn **198-199**
Murray, W. H.: Quoted 59
Muse, Lamar 290
Museums: Goodwell, Okla. 336; St. George's, Grenada 707; *see also* Art museums
Music *see* Country music
Myers, Peter 382, 386, 388

N

Nahuatl (language) 164, 433, 438
Nakamura, Hideo 248
Nakashima Inn, Shimonoseki, Japan **264**
Namu (killer whale) 226, 232
Nantira Jetty, Rangoon River, Burma **98-99**
Naropa Institute, Boulder, Colo.: Student **211**
Narrow-gauge railroad: San Juan Mountains, Colo.-N. Mex. **190**, 211
Nathans, Daniel 832
National Aquatic Resources Agency (Sri Lanka) 776, 784
NATIONAL GEOGRAPHIC: Article selection 561; Production center 556; Reagan quip 554
National Geographic Society: Expeditions: Everest climb (1963) 75; Grants: Frozen Sea Expedition 642, Río Azul (ancient city), Guatemala 137-137A, whale photography 784; ***Our Society Opens New Doors***. By Gilbert M. Grosvenor. Oct., 554-560
National Institutes of Health, Bethesda, Md.: Cancer research 832, 844; Genetic research safeguards 844, lawsuit involving 847
National parks: India: ***Tiger! Lord of the Indian Jungle***. By Stanley Breeden. Dec., 748-773
National War Memorial, Edinburgh, Scotland 44
National Wildlife Refuges, U. S.: ***North American Waterfowl: Troubles and Triumphs***. By John Madson. Nov., 562-599
Nats (spirits): Burma 107, 109
Natural gas: Colorado 194, 214
Naucalpan de Juárez, Mexico 148
Navajo Indians: Child **195**; Pollen use 496, 518, 520
Ne Win 94, 100, 107, 115
Neanderthal grave sites: Iraq 496
Nebraska: Landfill **383**; Lichens **366**; Prairie dog burrow, abandoned **386-387**; Soil respiration test **370**
Necklaces: ***Africa Adorned***. By Angela Fisher. Nov., 600-633
Needles, Calif. 343
Neiman-Marcus (store): Dallas, Texas 286, 287, 294
Nematodes **365**; Micrograph **368**
Neolithic monuments: Scotland **51**
Nepal: Deforestation 731, 740-741; Monsoon rains **732, 733**, erosion **731**, landslides 731, 741, 746; Reforestation **730-731**; *see also* Everest, Mount, China-Nepal
Nero, Robert W. 126, 134
Ness, Loch, Scotland 48, 63, 66
Ness, River, Scotland 40
Nestlé, Henri 681, 686
The Netherlands: Chocolate production 678; Cocoa powder invented (1828) 669, 678
Netzahualcóyotl, Mexico 159, 160, 172; Aerial view **176-178**; Population 160, 179; Rural immigrants 179
New Alma Hotel, Alma, Ga. **812-813**
New Bedford, Mass.: Underground Railroad 37

New Deal (Roosevelt program): Agencies 326, 340 *see also* Farm Security Administration
New Delhi, India: Dust storm 715
New England: Soil 376; Underground Railroad 9, 30, 35, 37
New Fire Ceremony (Aztecs) 168
New Jewel Movement (Grenada) 690, 695, 698, 701, 705, 708
New Hampshire: Loons, common **574-575**
New Mexico: Pollen pellet collection **510-511**
New Year celebrations: Burma 90, **90-91**; Scotland 40
New York: Salon **521**; Underground Railroad 35
New York, N. Y.: Cocoa futures market 675; Demolition site **384**; Garden **385**; U. S. Route 1 793, 804, **804-805**
New Zealand: ***Maoris: At Home in Two Worlds***. By Yva Momatiuk and John Eastcott. Oct., 522-541; ***Maoris: Treasures of the Tradition***. By Douglas Newton. Oct., 542-553
New Zealand Maori Council 529
Newbern, Tenn.: Farm 381
Newburyport, Mass.: Aerial view **803**; Smith family home **800**, 801
Newman, Cathy: ***Pollen: Breath of Life and Sneezes***. Oct., 490-521
Newport, Ind.: Underground Railroad 15, 17
Newton, Douglas: ***Maoris: Treasures of the Tradition***. Oct., 542-553
Newton, John 39
Ngata, Sir Apirana 526, **527**, 533, 538
Ngata, Sir Henare 533
Ngata College, New Zealand: Student **533**
Ngati Porou (Maori tribe): ***Maoris: At Home in Two Worlds***. By Yva Momatiuk and John Eastcott. Oct., 522-541
Ngati Ruanui (Maori tribe): God stick **544**
Ngati Tahinga (Maori tribe): Bone chest **553**
Ngati Tamatera (Maori tribe): Meetinghouse lintel **548-549**
Ngati Terangi (Maori tribe): Combs, chief's **544**
Ngati Whakaue (Maori tribe) 542
Ngati Whatua (Maori tribe): Pendant **551**
Nicklin, Flip, photographer: ***Rare Look at Sperm and Blue Whales: The Unknown Giants***. Dec., 774-789; ***The Whales Called "Killer."*** Aug., 220-237
Nicklin, Terry **778-779**
Nicolau de Almeida, Fernando **462, 467**
Nicolson, James R. 55
Nielson, Fabby K. J. 617
Niger: Body adornment: Wodaabe **605, 632, 633**; Jewelry: Silver Tuareg cross **627**
Nigeria: Jewelry **602, 613, 618**; Urbanization 184
Night sky exhibit: NGS headquarters **556**
Nitrogen cycle: Soil 372, 375, diagram **372**
Nitrogen synthesis: Cereal plants 836, 840
No Man's Land Museum, Goodwell, Okla. 336-337
Nobel prizewinners: Genetic research 823, 832, 837, 840
Nodaira, Japan 242
Noguchi, Hidehiko 240
Noguchi, Tamao 270
Norman, Philip 516
Norris, Kenneth 782
Norristown, Pa. 3; Racial disturbance (1849) 30
Norsemen: Scotland 44, 51, 56, runes **51**
North America *see* Canada; Mexico; United States
North American Aerospace Defense Command (Cheyenne Mountain Complex) 208
North American Loon Fund 574
North American Waterfowl: Troubles and Triumphs. By John Madson. Nov., 562-599
North Carolina: Slaves 10-11, 17; U. S. Route 1 **810, 811**, Ford tractor **795**
North Dakota: Farm **393**; Potholes 567, **568-569**
North Dallas: ***Dallas!*** By Griffin Smith, Jr. Sept., 272-305
North Island, New Zealand: ***Maoris: At Home in Two Worlds***. By Yva Momatiuk and John Eastcott. Oct., 522-541
North Sea: Oil fields 44, 46, 47, 49, 54, map locating 49
North Star: Time exposure **19**; Underground Railroad passage 11, 19, 22, 39
Northern puffer (fish) 268
Northern Territory, Australia: Drought 732, 736, bushfires 732; Wet and dry seasons 731-732
Northwest (region), U. S. *see* Island Park, Idaho
Norwalk, Conn.: Bakers **796**
Noval (port-wine firm) 482; Vineyards **477**
Nowicke, Joan 493, 509
Nu, U 94
Nuclear weapons, protest against: Scotland 63
Nuer (people): Necklaces **611**
Nuhiti Station, New Zealand 524, **536-537**
Numantia (ancient city), Spain 466, 469; Ruins **469**
Núñez de Balboa, Vasco: Discovery of Pacific Ocean 424
Nuns, Buddhist: Maymyo, Burma **110-111**
Nutmegs: Grenada 694, 701, processing station **705**
Nutrition: Biotechnology applications 834, 836, 837
Nuuttila, Seppo 506

O

Oberlin, Ohio: Underground Railroad station 15
Oberlin College, Oberlin, Ohio 15; Students 15-16
Oceanic Research Foundation 642
Oceloapan, Mexico 438
Offshore oil rigs: North Sea 46, 47, design studies **46**; South China Sea 730
Ogallala aquifer, U. S. 354
Ogboni cult: Bracelet **618**
O'Gorman, Juan: Death 163; Murals by **162-163**
O'Halloran, Pat 593
Ohio: Underground Railroad 9, 15, 16, Rankin house **18, 19**
Ohio River, U. S.: Underground Railroad crossings 15, 16, 19, 22
Ohmori, Seikaku 247
Ohtani, Sadao 241, 242
Oil, plant 842-843
Oil, whale 234; Sperm whales 775, 781-782
Oil exploration: Pollen analysis 496, 505, **508**
Oil fields: California 343, 346; Colorado 194, 202-203, 214, map 197; North Sea 44, 46, 47, 49, 54, map 49
Oil industry: Biotechnology applications 841-842; Scotland 44, 46, 47, 49, 54, 62, oil terminal **47**, 54, workers **46**
Oil shale: Mines and mining **212**, 215, 217
Oildale, Calif. 345
Okefenokee Swamp, Fla.-Ga. **815**
Okies: ***The Okies—Beyond the Dust Bowl***. By William Howarth. Sept., 322-349
  Camping: Recreational camping 348, **348-349**; Westward migration 334, 340, 342, 344
  Diseases: Labor camps 344; Westward migration 334
  Education 345, 346
  Homesteaders 326
  In literature 324, 326, 343
  Industry jobs: World War II 345
  Meal, typical 344
  Oral history project 344
  Origins 326, 339
  Poet *see* McDaniel, Wilma Elizabeth
  Photographs, Depression-era **326-327, 334-335**
  Recreational activities: Camping 348, **348-349**; Car racing 324; Motor trike riding 349
  Sharecroppers 324, 326, 328, 330, 339
  Songs and music 324, 329, 330-331, 342, 348; Recording star *see* Haggard, Merle
  Westward migration 323, 324, 326, 328, 329, 330, 334; Camping 334, 340, 342, 344; Main route 326, 338, 342, map showing 326-327; Motor vehicles 324, **326-327, 334-335**,

339-340, 344, breakdowns 340; Number of migrants 326, 340; Travel expenses 340
Oklahoma: ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349; Seminole freedmen 20, 22
Oklahoma Seminole Freedmen: Membership card **21**
Oku-hotaka (peak), Mount Hotaka, Japan **245,** 248
Olazabal, Francisco 482
Old Course (golf course), St. Andrews, Scotland 63
Old Town, Mombasa, Kenya 724-725
Old Xico, Mexico 425, 439
Oldenburg, Claes: Sculpture by **299**
Oliveira, Luis 477
Olympic Games: Finnish athletes 496, 506; Winter Olympics 193, 253
Omachi, Japan: Snowfall **248-249**
Onions: Soil conservation experiment **360**
Ooievaar Mill, Zaandam, The Netherlands **679**
Opening New Doors. By Gilbert M. Grosvenor. Oct., 554-560
Operation Urgent Fury (Grenada invasion) 689, 694, 695, 700; Commemorative T-shirt **709;** Helicopter fragments **695**
Opium poppies: Burma 98, 105
Oporto, Portugal **460-461,** 463, 464, 485-487; Industry 464, 485; Market **464**
Orca *see* Killer whale
Orange Walk: Glasgow, Scotland **55**
Oregon: Okies 339
Organization of Eastern Caribbean States: Grenada invasion 694
Orinoco River basin, Venezuela: Cacao, origin of 666, 668
Orissa (state), India: Aerial view **724**
Orizaba, Pico de (volcano), Mexico **430-431,** 438, 439, 441; Sacredness 431, 441
Orkney Islands, Scotland: Cathedral 44; Knitting co-op 54; Pony show **60-61;** Skara Brae excavations **51**
Oromo (people): Silver bracelets **626**
Ota, Masayuu 241, 242
Our Society Opens New Doors. By Gilbert M. Grosvenor. Oct., 554-560
Outer Banks, N. C.: Waterfowl habitat 571, 575
Owen, Cole 836
Owls *see* Great gray owl
Owo, Nigeria: Ivory bracelet **613**
Oyama summit, Tateyama (peak), Japan 242, **246-247**

P

Pacific Ocean: Discoverer 424; El Niño current 731; Islands *see* New Zealand; Polynesian migration 522, 526, map 526
Pack trips: ***Following Cortés: Path to Conquest.*** By S. Jeffrey K. Wilkerson. Oct., 420-459
Padwa, David 841
Pagan, Burma: Pagodas 115, **116-117**
Pagodas: Burma 90, **92-93,** 94, **96,** 115, **116-117, 119**
Palaung (people) 107
Paleoclimatology: Pollen analysis 496, 502, 506
Paleolithic art: Portugal 479, 482
Palma, Luis 476, 477
Palmer Springs, Va.: Farmer **797**
Palomar Palomar, Felipe 467-468
Palouse Hills (region), Idaho-Wash.: Erosion 360, **378-379,** 399; Loess 377; Strip-cropping **398-399**
Palynologists: Anthropology 496, 502-503, 506, **507;** Criminology 496, 504, **508;** Oil exploration 496, 505, **508;** Paleoclimatology 496, 502, 506
Palynology: ***Pollen: Breath of Life and Sneezes.*** By Cathy Newman. Oct., 490-521
Panels, secret: Dobbin home, Gettysburg, Pa. **25**
Panhandle (region), Texas: Farmers 354; Windstorm aftermath **356-357**
Papa (Maori goddess) 548; Lintel depicting **548**
Parachute, Colo. 215
Parachute Creek, Colo.: Shale-oil extraction plant **212,** 217-218
Pardo González, Angelines and Joaquín 466
Parel, Henry E. 683
Parel neighborhood, Bombay, India: Floods 739
Parker, Barbara **209**
Parker, Bob 199, **209**
Parker, Harry 292
Parker, William, and wife 31
Parlin, Fred 195
Parsons, Willie **501**
Parvati (Hindu goddess) 728
Pascual Polo, Antonio 470
Paseo de la Reforma (avenue), Mexico City, Mexico 149, **160-161,** 161; Statue 149, 152, **161**
Patetonga, New Zealand: Meetinghouse lintel **548-549**
Patrick, S. C.: Chief of police **797**
Paz, Octavio: Quoted 148, 172
Peacock, James 840
Peafowl: Male **726,** calls 726, 770; Tiger prey 770
Pear trees: Fertilization **502-503**
Pearson, Drew **289**
Peart, Lewis 30
Pech, Trinidad 137A
Pedology (soil science): ***Do We Treat Our Soil Like Dirt?*** By Boyd Gibbons. Sept., 350-389
Pegu, Burma 99, 101; Buddha (statue) 101; Rice harvest **104-105**
Pemex Building, Mexico City, Mexico 148
Peña, Alfredo **203**
Peña, Federico 201, 203, **203,** 206
Peñafiel, Spain: Castle **484**
Pendants: African **602, 615, 618, 623, 628, 631, 632;** Maori **550, 551**
Pende (people): Ivory talisman **603**
Penguins: ***Icebound in Antarctica.*** By David Lewis. Nov., 634-663
Pennsylvania: Boundary marker **7;** Underground Railroad 6, 22, Gettysburg site **25,** *see also* Philadelphia
Pennypacker, Elijah 30
Pentland Hills, Scotland: Golf course **42-43**
Pepys, Samuel: Quoted 668
Perea, Alejandra **166**
Perea, Patricia **167**
Perot, H. Ross **276,** 290-291, 292
Perot, H. Ross, Jr. **276**
Persian Gulf: Dhows 724
Pesticide residues: Waterfowl 590-591
Peter, Daniel 681, 686
Peterson, John 381
Petit Calivigny Point, Grenada: Helicopter fragments **695**
Petite Martinique (island), The Grenadines: Population 694
Petróleos Mexicanos (oil company) 148
Pewhairangi, Ngoi 593-540
Philadelphia, Pa.: Recruitment poster, Civil War **33;** Underground Railroad 3, 13, 15, 29-30, 31, fugitive slaves, refuge for 9, 10, **11,** 23, 25, 29, 30, statistics 29; U. S. Route 1 793
Phillippines, Republic of the: Monsoon rains 728
Phillips, Edith Steiger **361**
Phlox pollen: Electron micrograph **493**
Photochromic eyes: Puffers 270
Photographic archive, Depression-era: Library of Congress, Washington, D. C. 334, 340, 342; Photographs from collection **326-327, 334-335**
Photography, aerial: ***Patterns of Plenty: The Art in Farming.*** By Georg Gerster. Sept., 391-399
Piatt, Mrs. Benjamin 15
Picts 49, 55
Piedmont (region), U. S.: Erosion 376, 388; Geologic history 376
Pierre, Leslie 708
Pigs, wild: New Zealand **534**
Pike, Zebulon M.: Quoted 219
Pillai, Balakrishna 728, 746
Pima County, Ariz.: Pollen law 520
Pinkerton, Allan **12,** 14
Pinnas, Jacob 491
Pinsetter (camp), East Face, Mount Everest **85**
Pinto da Silva, Daniel 488
Pismo Beach, Calif.: Campsite **348-349**
Pizarro, Francisco 424

Plano, Texas **280-281,** 282, 283
Plantations: Cacao 666, 668, *see also* Cacao groves; Florida **28;** Grenada (18th century) 692, 708; Louisiana **26,** 30, slave quarters **26, 27;** South Carolina **4-5**
Plants: ***Pollen: Breath of Life and Sneezes.*** By Cathy Newman. Oct., 490-521; Species development 818, 819, **835,** 836-837; *see also* Cacao trees
Plasma cells: Genetic manipulation of 839; Immune response, role in: Diagram **838-839**
Plasmids 831, 833, 834
Plate tectonics: Scotland 55
Plaza de Toros, Valladolid, Spain **489**
Pocas Pintão, Manuel **467**
Podokwo (people): Beaded cap **605**
Point Salines, Grenada: Airport **696, 697,** 709
Poisonous fish *see* Puffers
Pokot (people): Jewelry 602, **632**
Polar Star (icebreaker) **637,** 645, 648
Pollen: ***Pollen: Breath of Life and Sneezes.*** By Cathy Newman. Oct., 490-521
  Allergies 514, 520; Challenge test **496;** Economic costs 516; Mechanism **494-495,** 514; Research 516; Symptoms 490, 495, 514, 516; Treatments: Helmets 490, ***cover,*** medications 516, shots 491, 495, 514, 516
  Art **518-519**
  Collection methods **500, 501,** 509, 510-511, 514; Pellets 506, **510-511**
  Dispersal: Animal 501, 503, 511, 516; Mechanical 501, **502-503, 505,** 511; Wind **497,** 498-499, 501
  Electron micrograph **492-493**
  Exine 492, 501
  Fossils 496, 501, 502, 503, 505, **506**
  Health benefits, alleged 496, 505, 506, 508, 509, 510, **521;** Disputed 506, 509, 510
  Plant reproduction, role in 490-491, 496, 501
  Products industry 508-509
  Ritual uses 496, 518, **518,** 520
  Seasons, chart showing **512-513**
  Word origin 491
  Yellow rain: Controversy 509; Spotted leaves **509**
Pollen bars (snacks) 506
Pollen Services, Inc.: Pollen collection 510-511, 514
Pollution control: Pueblo, Colo. 210
Polynesians: Migrations 522, 526, map 526
Popocatépetl (volcano), Mexico **452,** 455
Population growth: ***The World's Urban Explosion.*** By Robert W. Fox. Aug., 179-185
Porbandar, India: Flood ***Dec. cover***
Porcupine fish 268; Inflated **262**
Port wine 469, 474-475, 480-481; Grapes 463, 474, vineyards **474-475, 477;** Production 481-482, blending room **462,** regulation 463, 469, 481; Transport, traditional **472,** 487
Port Wine Institute, Oporto, Portugal 481
Port-wine shippers 467, 474, **477,** 480, 481, 482, 485; Brotherhood **467**
Porter, Jeremiah, and wife 23
Portugal: ***Iberia's Vintage River.*** By Marion Kaplan. Oct., 460-489; *A Traveler's Map of Spain and Portugal.* Oct. supplement
Pot worms **372;** Slime track **373**
Potholes (geologic formations): North American prairies 567, **568-569**
Potomac River, U. S. **806-807**
Pottawatomie, Kans. 14
Pottery: Maya artifacts **137A;** Zautla, Mexico **440-441,** 444
Powell, Calvin **205**
Prairie dogs **387;** Abandoned burrow **386-387**
Prairie wetlands: North America 566, 567, **568-569**
Prayer breakfasts: Dallas, Texas 297
Pre-Hispanic culture: ***Following Cortés: Path to Conquest.*** By S. Jeffrey K. Wilkerson. Oct., 420-459
The Preposterous Puffer. By Noel D. Vietmeyer. Aug., 260-270
Prestonwood Baptist Church, Dallas, Texas 299
Price, John 15
Priests, Shinto: Japan 242, **246, 260-261**
PRODES (commercial seed producer) 469-470
Prohibition (law): Bootlegging 793, 817
Project Tiger 755; Map locating reserves 755
Prostaglandins: Allergies, role in 495
Proteins: Cellular production 825, 831, 832, 834, "blueprint" for 820, 825, diagram **822-823;** Definition 833; Genetic manipulation 834, 836, 837
Protest demonstrations: Mexico City, Mexico 165, 172, **174,** 175; Scotland 63; Washington, D. C. **38-39,** 39
Proust, Marcel 514
Psihoyos, Louie, photographer: ***The Underground Railroad.*** July, 3-39
Psychotherapy training: Tinted rooms **211**
Pub: Edinburgh, Scotland **69**
Puberty rites: Pollen use **518,** 520
Puebla (state), Mexico 444
Pueblo, Colo. 208, 210
Pueblo Indians: Pollen use 518, 520
Puffers (fish): ***The Preposterous Puffer.*** By Noel D. Vietmeyer. Aug., 260-270
  As food 268; Sashimi 261, 263, **264-265,** 266, **267;** Soup 266, 270
  Eyes 270
  Fishing industry **263,** 266, **266,** 268, 270
  Historical importance 268
  In literature 261, 268, 270
  Inflation 261, 263, 270; Inflated fish **262, 263,** strength of 268
  Locomotion 270
  Nontoxic varieties 268
  Organs, toxic 261, 263, 264
  Poisonings 261, 263, 268, 270; Deaths, number of: Japan (1974-1984) 264; Fatality rate 261
  Range 268
  Shinto prayers, object of **260-261**
  Size 268
  Skin 261, 268
  Species, number of 261, 263
  Sportfishing 268, 270
  Teeth 268, 270
  Toxin 264, 270; Effects of 261, 263, 270; Lethal dose 270; Potency 264, 270
  Value: Restaurant prices 263, 266; Wholesale prices 268
Pukeroa, New Zealand: Pallisade gateways 542, **542,** detail **543**
Purple, Adam **384, 385**
Pyu (people): 1, 115, 121; Bronze statues 1, **1,** 121

Q

Quakers (sect): Abolitionists 9, **13,** 23, 31, 35; Chocolate, praise for (18th-century England) 668; Underground Railroad agents 15, **16,** 23, 27 *see also* Garrett, Thomas
Quetzalcoatl (Aztec god) 424, 426, 448, 454, 458
Quinta do Noval (vineyards), Portugal **477,** 482
Quinton, Michael S.: ***The Great Gray Owl.*** July, 123-136

R

Radio tracking: Manatees 409, **417,** 418
Radioactive tracers: Monoclonal antibodies 830, 832, 843, 844, 845
Radioactive wastes: Colorado sites 214, **215**
Radix, Kenrick **699**
Rafting: Iceland expedition 306, **309, 318, 320,** 321
Ragweed, giant: Flowers **512**
Ragweed pollen: Allergies **494-495,** 512, 514; Harvesting **501;** Regional levels 516, 520; Seasons, chart showing **512-513**

Railroads: Narrow-guage railroad **190,** 211
Rain: ***Monsoons: Life Breath of Half the World.*** By Priit J. Vesilind. Dec., 712-747; Soil, effects on 369, diagram **369**
Rainwater basin, Nebr.: Avian cholera 586, 589
Rajasthan (state), India: Arid plains 714, **714-715**
Ramage, Colin 722
Ramsay, Norma 830
Rangers, U. S. Army: Grenada invasion 694, 695
Rangoon, Burma 94, **96-97,** 97; Pagodas 90, **92-93,** 94, **96;** Parade 94, 96; Seasonal rainfall, graph showing **717**
Rangoon River, Burma **98-99**
Rankin, Carolyn 820
Rankin, John 19; House **18, 19;** Statue **19**
Ranthambhor National Park, India: ***Tiger! Lord of the Indian Jungle.*** By Stanley Breeden. Dec., 748-773
Ranvik Glacier, Antarctica: Iceberg calving **658-659,** 660
Rapid-transit systems: Dallas, Texas 294; Mexico City, Mexico **142-143,** 152-153, 155
Rapids: Jökulsá á Fjöllum (river), Iceland 306, **320, 321**
Rare Look at Sperm and Blue Whales: The Unknown Giants. By Hal Whitehead. Dec., 774-789
Rashaida (people): Veiled girl **605**
Rathbun, Galen 418
Rathore, Fateh Singh 771
Ratliff, Lula Mae **811**
Rauer Islands, Antarctica 648-649, 661, map 636
Reagan, Ronald: Dedication of NGS building 554, **560;** Pollen bars (snacks), fondness for 506; Televised address (1983) 709
Recombinant DNA: Creation 820, 833; Human insulin production 824, 831, 832; Interferon production 831; Plant species development 819
Red Rock Lakes, Mont.: Trumpeter swan population 583
Red velvet mite **370**
Redhead, Willie 690
Redman, Lillian **339,** 342-343
Reeb, Hans Rudolf 682
Reedy, Tamati 419
Reelfoot Lake, Tenn. 381
Reforestation: Nepal **730-731**
Refugees: Karens 113, **114-115;** *see also* Farm refugees; Fugitive slaves
Regatta: Carriacou (island) The Grenadines **706-707**
Régua, Portugal: Winery 482
Reichardt, Louis 88
Reid, Daniel 88
Reid, Robin **467**
Rendille (people): Body adornment **610, 611**
Reporua, New Zealand: Maoris **523,** 540, funeral **530-531**
Reproduction: Heredity mechanisms 828-829, diagram **828-829**
Reproduction, plant 501; Pollen, role of 490-491, 496, 501
Resistance Day parade: Rangoon, Burma 94, 96
Retailing: Dallas, Texas 283, 286-287, 294
Reuben, Jac **535**
Reuben, Ned **535**
Reunion, family: Stills **10-11,** 30
Reunion Tower, Dallas, Texas **273;** Height 278
Revolution Day celebration: Mexico City, Mexico 169, 172
Revolutionary Military Council (Grenada) 694, 695
Rice, Margo 777, 780, 784
Rice: High-yield strains 104, 736
Rice farming: Asia, monsoonal 720, 724, 736; Burma 90, 104, exports 94, 104, harvest **104-105**
Rice fields: Central Valley, Calif. **564-565,** 594; Goa, India **720-721, 725;** Sulawesi (island), Indonesia **744-745;** Texas **396**
Richardson, Texas 282
Richmond Hill, Grenada: Prison **698-699**
Ricketts, Edward F.: Quoted 268
Riddick, Steve 505
Rider, Echo 324, 330
Rifkin, Jeremy **846**
La Rinconda (street market), Mexico City, Mexico 164
Río Azul (ancient city), Guatemala 137-137B, **137-137B**
Rio Blanco County, Colo.: Shale project 217
Río Lerma, Calle, Mexico City, Mexico 155
Ríos Pérez, Alfredo 158
Ripley, Ohio: Underground Railroad site **18, 19**
Rivas, Everett **816,** 817, **817**
River trips: ***Iceland's Wild Glacier-born River.*** By Paul Vander-Molen. Sept., 306-321
Rivers: ***Iberia's Vintage River.*** By Marion Kaplan. Oct., 460-489; ***Iceland's Wild Glacier-born River.*** By Paul Vander-Molen. Sept., 306-321; *see also* Crystal River, Fla.
Rob Roy *see* MacGregor, Robert
Robert the Bruce, King (Scotland) 56; Ceremonial sword 57-58; Defeat of Edward II 44, 51, 57
Robert Burns suppers 40, **58,** 68
Roberts, Hollis **341**
Robertson, Thomas A. **45**
Robots: Electronic brains 52
Rochester, Minn.: Waterfowl **598-599**
Rocky Mountains, Canada-U. S.: *Central Rockies,* The Making of America map series. Aug. supplement; *see also* San Juan Mountains, Colo.-N. Mex.
Rodrigues, António and Júlia 477-478
Rodriguez, Juan 203
Rogers, John P. 583
Rogers, Will: Quoted 337
Roller skaters: Mexico City, Mexico **154-155**
Roma, Colonia, Mexico City, Mexico 168-169
Roman ruins: Spain 466, **469**
Romans: Scotland 49, 55; Spain 466, 469
Rongowhakaata (Maori tribe): Canoe bailer **547**
Roosevelt, Franklin D.: Programs *see* New Deal
Rooster comb pollen: Electron micrograph **493**
Rose, Dorothy 340
Rose, Pat **412, 413**
Ross, Anthony **198**
Ross, Glade 219
Ross' geese **564-565**
Route 1 *see* U. S. Route 1
Route 66 *see* U. S. Route 66
Rowell, Mike 732
Royal and Ancient Golf Club, St. Andrews, Scotland 63
Royal Highland Show, Scotland **66-67**
Royal Palace, Mandalay, Burma 107, 109, 118
Ruatoria, New Zealand 522
Rufino Tamayo Museum, Mexico City, Mexico **163**
Ruhe, Bob 354-355, 360, 377, 380
Ruiz, José, and cousin 159, 160
Ruiz de Velasco, Christina **159**
Runic inscriptions **51**
Running the Jökulsá á Fjöllum, Iceland's Wild Glacier-born River. By Paul Vander-Molen. Sept., 306-321
Rural-urban migration: Mexico City, Mexico 144, 158, 164, 175, statistics 139, 175; ***The World's Urban Explosion.*** By Robert W. Fox. Aug., 179-185

S

SCS *see* U. S. Soil Conservation Service
Sacher, Franz 682
Sacher torte 682, **685**
Sacramento Delta, Calif. 375, 596
Sacramento Valley, Calif.: Wetlands 596 *see also* Butte Sink
Sacramento National Wildlife Refuge, Calif. 593; Avian cholera victims **587**
Sacrifice *see* Human sacrifice
Saeki, Norimaro 242, **246**
Saguaro cactus **517;** Flowers **516,** pollen **514**
Sahagún, Bernardino de 451
Sahara (desert), Africa: Peoples **628, 629**
Sailboats: Carriacou (island), The Grenadines **706-707**
Sailplane flying: Colorado 206
St. Andrews, Scotland: Cathedral 44; Golf course 40, 48, 63; University 48
St. Catharines, Ontario, Canada: Fugitive slaves, refuge for 3, 38

UMI

St. George's, Grenada 701; Aerial view **692;** Carnival festivities 690, **693;** Harbor **692, 693,** 701; Market 701, 705; Museum 707
St. George's University School of Medicine, Grenada: Aerial view **700;** American students 695, 700; Anatomy class **700**
St. Johns River, Fla.: Manatee **408-409**
St. Luke "Community" United Methodist Church, Dallas, Texas 300
Sallisaw, Okla. 324
Salmon: Farm **67;** Killer whale prey 223, 227, 231
Salt: Crop strangulation **362,** 376; Soil treated for **362-363**
Salt River Valley, Ariz.: Irrigation project 375, **394**
Salvat, Xavier **687**
Sambar deer: Tiger prey 753, 759, 760, **765, 766-767, 769,** 771, 773
Samburu (people): Hairstyle **611**
Sampson, Neil 381-382
Samter, Max 512, 520
San Angel, Mexico City, Mexico 168
San Diego, Calif.: Aquarium **237**
San Joaquin Valley, Calif. **338-339;** Dust storm (1977) **354-355;** Irrigation systems 588, 589-590, 596, wastewater contamination 588, 590; Okies 343-349; Orchards 509; Wetlands 596, 598 *see also* Kesterson National Wildlife Refuge
San Juan fiesta: Soria, Spain 466
San Juan Mountains, Colo.-N. Mex.: Autumn **190;** Hang gliding **191;** Mining 186, 211; Narrow-guage railroad **190,** 211
San Luis, Colo. 211
San Luis Valley, Colo.-N. Mex.: Solar heating 211
San Miguel stone (jaguar image) **431,** 439, 441
San Salvador Tzompantepec, Mexico 448
Sancho II, King (Castile) 467, 476
Sand: Soil 357, **367,** 380
Sand dunes: California 348; Colorado **218-219**
Sand fighter (farming implement) 392; Patterns produced by **392**
Sand Hills, Nebr.: Irrigation 354
Sand hopper **367**
Sandeman (port-wine shipper) 482
Sanders, Cal 214-215
Sanders, Ariz. 343
Saneyoshi, Akio 256, 259
Sanger, Frederick 832
Sanger brothers 286, 287
Sangre de Cristo Mountains, Colo.-N. Mex. 210, **218-219**
Santa María la Redonda, Mexico City, Mexico 158
Sarasota, Fla.: Ragweed pollen level (1983) 520
Sardine fishing: Portugal 485
Sardón de Duero, Spain: Monastery 469
Sasa, Yasuo 240
Sashimi: ***The Preposterous Puffer.*** By Noel D. Vietmeyer. Aug., 260-270
Satoh, Tsutomu **267**
Satōw, Mrs. Tel N. 240
Scales, Dale 344, **346**
Scherschel, Joseph J., photographer: ***The Preposterous Puffer.*** Aug., 260-270
Schmidt, Justin **517**
A Scholarly President Looks at Mexico's Future. The Editor. Aug., 175
Schou, Jannik: ***Icebound in Antarctica.*** By David Lewis. Nov., 634-663
Scoon, Sir Paul 710
Scotch whisky 42; Manufacture 53
Scotland: ***Scotland, Ghosts, and Glory.*** By Rowe Findley. July, 40-69
Christianity: Arrival of 44, 48, 55; Churches 44, **50;** Orange Walk **55**
Economic recession 44, 46, 49, 54; Localized recovery 46, 49, 54; Voter reaction 63
Emigration 59
Employment: Jobless rates 49, 57; Loss of jobs 53, 54; New industries 44, 46
Facts and figures 49
Golf 40, **42-43,** 48, 63
Government: Legal system 62; Representation in Parliament 63; Secretary of State 49; United with England 49
History 44, 46, 48, 49, 51, 55-59, 64-65, 68
Industries 49; Electronics **46,** 47, 49; Fishing 49, 54, **67;** Laser technology **46,** 52-53; Livestock 49, **64-65, 66;** Microchip manufacture 44, 49; Oil 44, 46, **46,** 47, **47,** 49, 54, 62; Textiles 54, **62**
Legends 55, 56, 59, 63
Lochs and canals 40, 48, 63, 66, **67,** 68
Maps 48, 49
Monarchy 48, 49, 55, 56, 59
Music, traditional 40, 44, 55, 66, 68
Political movements 63
Public housing 44; Abandoned **57**
Sports **60-61** *see also* Golf, *above*
Topography 55, 63
Warfare with England 44, 48, 49, 51, 57, 58, 59
Urbanization 59
Scots: Descendants in the United States 44; Settlement in Caledonia (Scotland) 49, 55
Scots and Picts, King of 49
Scots-Irish 55
Scott, Sir Walter 62
Scottish College of Textiles, Galashiels, Scotland 54
Scottish Fiddle Orchestra 68
Sculpture: Chocolate **686,** *Nov. cover;* Granite boulders **560;** ***Maoris: Treasures of the Tradition.*** By Douglas Newton. Oct., 542-553; "Stake Hitch" (Oldenburg) **299;** *see also* Statues
Sea cows *see* Manatees
Sea urchins: Maori delicacy **533,** 539
Sea World, Inc.: Killer whales captured 237, **237**
Seafood *see* Sashimi
Seals: ***Icebound in Antarctica.*** By David Lewis. Nov., 634-663; Killer whale prey 224, 231
Seattle Public Aquarium, Seattle, Wash.: Killer whale 232
Seed, J. R. 54
Seeley, Tom 509
Seidler, Ned, artist: ***Following Cortés: Path to Conquest.*** Oct., 420-459
Seidler, Rosalie, artist: ***Following Cortés: Path to Conquest.*** Oct., 420-459
Selenium poisoning: Bird-embryo deformities **588,** 589
Seminole, Texas: Erosion 387-388
Seminole Canyon, Texas: Coprolites 502-503
Seminole freedmen 20, **21,** 22
Seminole Indians: Fugitive slaves, harboring of 9-10, 20, 22
Seminole Negro Indian Scouts **20-21,** 22
Sénoufo (people): Ancestor worship 616; Fortuneteller's tools **617**
Serié, Jerry 567
Serpentine (rock): Maori pendant **550**
Seshan, T. V. A. 740
Seven Mile Bridge, Florida Keys, Fla. **816-817**
17th Street, Denver, Colo. **217**
Seychelles: Whale conservation program 779, 784
Shadd, Mary Ann **13**
Shafter, Calif. 345
Shale-oil extraction plants: Colorado **212,** 215, 217-218
Shamu (killer whale) **237**
Shan State, Burma: Communist rebels 98; Tea growing 107
Shanidar Cave, Iraq: Neanderthal grave sites 496
Shans (people): Burma 100, 115
Sharecroppers: Okies 324, 326, 328, 330, 339
Shasta Lake, Calif.: Silverthorn Resort 345
Shasta-Trinity National Forest, Calif.: Douglas fir breeding program **504, 505**
Sheep raising: New Zealand 524, **536-537;** Scotland **64-65**
Shetland Islands, Scotland 40; Oil terminal **47,** 54; Scottish claim to 46; Textile work **62**
Shetland pony **60-61**
Shetland wool: Carding and spinning **62**
Shimonoseki, Japan: Kite maker **269;** Puffer fishing: Auction 266, **266,** 268, statistics 266, workers

263, 266; Puffer products: Lanterns **268;** Restaurants 263, **264;** Shinto priests **260-261**
Shinhodaka, Japan: Hot spring **243**
Shinnecock Indians: Fugitive slaves, aid to 9, 30
Shinto priests: Japan 242, **246, 260-261**
Shinto shrines: Japan 240, 242, **246, 254-255**
Shipping industry, decline of: Scotland 49, 53, 63
Shirane, Mount, Yamanashi Prefecture, Japan: Climbers' tent **239;** Major peaks 248-249
Shrews: Soil aeration **364**
Shroud of Turin: Pollens 505
Shukla, J. 722
Shultz, George P. **137B**
Shwe Dagon Pagoda, Rangoon, Burma 90, **92-93,** 94
Shwe Nandaw Monastery, Mandalay, Burma **118-119**
Shwethalyaung (reclining Buddha), Pegu, Burma 101
Shweyattaw Buddha (statue), Mandalay, Burma **107**
Siberia (region), U.S.S.R.: Monsoon winds 728
Sickle-cell anemia: Genetic research 818, 832, 836
Sierra Club convention: Snowmass, Colo. **202**
Sierra Madre Oriental (mountains), Mexico: Cortés's route 422, 425, 438; Fortress 425, 439; Inns, ruins of 441; Passes 425, 443; Volcanic peak *see* Orizaba, Pico de
Silicon Valley, Calif.: Orchards displaced 388
Silver jewelry, African: Anklets **603, 628;** Bracelets **603, 628;** Hair ornaments **601;** Pendants **628, 631;** *see also* Coins, silver
Silver Lake, Rochester, Minn.: Waterfowl **598-599**
Silver mining: Panic of 1893 195; Played-out mine **212-213**
Silverthorn Resort, Shasta Lake, Calif. 345
Silverton, Colo.: Mining 186, 211
Silt: Soil 357, 358, **367, 369,** 380
Simanacas, Spain: National archives 473, **485**
Simonson, Roy 388
Simpson, Lee 278
Sims, Phillip 335, 336
Sinclair, Barbara 54
Singapore: Winter monsoons 730
Sirenia (order) 402, 415
Sirenia Project 418
16th Street Mall, Denver, Colo. **201**
Skagit Valley, Wash.: Organic farming **374-375**
Skara Brae, Orkney Islands, Scotland: Neolithic dwellings **51**
Skeletons, human: Anatomical model **700;** Maya tomb 137, **137A;** Sacrifice victims 445, **449**
Ski resorts: Colorado **192, 193,** 199, 200, 209, map locating areas 196-197, number of areas 199; Japan 241, 242, **250-253**
Skidmore, Owings & Merrill 555
Skiing: Colorado **190, 192, 193,** 199, 200, 203, 209; Japan 241-242, 251, **252-253, 256-257**
Skuas 653, 661
Slave owner's inventory (1849) **29**
Slave laws: United States 6, 11, *see also* Fugitive Slave Law
Slave trade: Africa: Beads used as barter 602
Slavery: Aztecs 429; Grenada 692, 701, abolished (1830s) 708; Maya 433; ***The Underground Railroad.*** By Charles L. Blockson. July, 3-39
Smartweed pollen: Electron micrograph **492**
Smith, Adam 59
Smith, Arthur G. **800,** 801
Smith, Dick 642
Smith, Edith 801
Smith, Griffin, Jr.: ***Dallas!*** Sept., 272-305
Smith, Hamilton 832
Smith, Jim 298-299
Smith, Joe 648
Smith, Norman 801, **801;** Ancestral home **800,** 801
Smith, Peter H. 796
Smith, Samuel A. 10, 11
Smithsonian Institution, Washington, D. C.: Tours of U. S. Route 1 796
Smoot, Mervin 290
Smythe, Caroline 782, 783
Smythe, Martha 777, 780
Smythe's Cottage (restaurant), Fredericksburg, Va.: Picture, upside-down **806,** 807
Snake River, Idaho: Loess 377
Snow: Water source 202
Snow geese, lesser **564-565, 578-579;** Avian cholera victims **587**
Snowmass, Colo.: Sierra Club convention **202**
Socialism: Burma 94, 100
Sociology *see* Human dynamics, study of
Sodbusters 361, 388
Soil: ***Do We Treat Our Soil Like Dirt?*** By Boyd Gibbons. Sept., 350-389
Aeration 364, **364-365,** 370, 375
Agriculture **350-351,** 353, 354, 360, 381, 386-387; Conservation tillage 382, 386; Crop rotation 360, 375, 388; Fertilizers: Chemical 353, 373, 375, 382, 388, manure 372, 373, 375, 384; Organic farming **374-375**
Bacteria **364,** 370, 372, **373,** 375; Nitrogen fixation 372, 375
Caliche **356-357,** 387
Clay **367,** 376, 380
Components 363, 380
Conservation: Agriculture 381, 382, 386; Costs 382; Experiments **360**
Erosion 354, 355, 357, 358, 360, 361, **361,** 376, **378-379,** 380, 381, 382, 388, **389;** Causes 354, **354-355,** 357, 361, **366,** 367, 369, 380, 386-387; Costs to the economy 355; Estimates of rates 355, 360, 378, 381
Formation 358, 363, 367, 370, 375, 376; Rate 381
Hardpans **350-351,** 380, 387
Horizons 363, 371, **371,** 377, 380; Diagram **371**
Humus 370, 375, 376, 380, 381
Irrigation 354, 358, 375; Salt strangulation **362,** 376, treatment for **362-363**
Living organisms 364, **364-365, 367, 368, 370, 372, 373,** 375
Loess 358, 371, 376, 377, 380, 381, 382
Minerals 363, 375, 376
Nitrogen cycle 372, 375; Diagram **372**
Organic matter 363, 364, 370, 371, 372, 373, 375, 376, 384
Research **368-369, 370,** 377, 380
Respiration 370; Testing of **370**
Sand 357, **367,** 380
Silt 357, 358, **367, 369,** 380
"T-value" 381
Types 358, 359, 361, 362; Cutaway paintings **359;** Map 358-359
Water 368, 369; Retention 364, 369, 370, 375, 382
El Sol de México (newspaper) 144
Solar heating: San Luis Valley, Colo.-N. Mex. 211
Solar Mesosphere Explorer Satellite: Student operators **210**
Solecki, Ralph 496
Solo River, Java (island), Indonesia: Floodwaters **741**
Somali Current, Indian Ocean 725
Somali jet stream 719, 725
Sonar *see* Echolocation
Songhai (people): Hairstyle of young woman **600-601**
Songye (people): Jewelry, ivory **612**
Soria, Spain: San Juan fiesta 466
Sørsdal Glacier, Antarctica 655
The South (region), U. S.: ***The Underground Railroad.*** By Charles L. Blockson. July, 3-39; *see also* Florida
South Africa: Zulu necklaces **603**
South Asia, with Afghanistan and Burma; Peoples of South Asia. Dec. supplement
South Carolina: Fugitive slaves 22; Plantation workers (1862) **4-5;** Slave's identification tag (1831) **29;** U. S. Route 1 **808,** byway **808-809**
South China Sea: Monsoons 728, 730, study data 722
South Dakota: Lead-poisoned geese **594;** Migratory birds **572-573**
Southeast (region), U. S.: Indians 324; Soil quality 376; *see also* Florida
Southeast Asia *see* Burma

Southwest (region), U. S.: Arroyos 380; *see also* Colorado; Dallas, Texas
Soviet Union *see* Union of Soviet Socialist Republics
Space Medicine Laboratory, University of Texas Southwestern Medical School **283**
Spain: ***Iberia's Vintage River.*** By Marion Kaplan. Oct., 460-489; *A Traveler's Map of Spain and Portugal*. Oct. supplement.
Spain, 16th-century: Chocolate 666, 668, 669, 682-683; Conquistadores *see* Cortés, Hernán
Spearmans, J. M.: Tobacco farm **374-375**
Sperm whale: ***Rare Look at Sperm and Blue Whales: The Unknown Giants.*** By Hal Whitehead. Dec., 774-789
Cases **774**, 781, **783**
Codas 776, 777
Conservation 776, 778-779, 784
Diet 781, 784
Echolocation 776, 777, 782
Eyes, limited use of 774
Habitat 782, 784
Hunting 777; Prey 777, 781, 782, stunning theory 776, 782
Individual characteristics 780, 784; Females 780
Oil 775, 781-782
Physical characteristics 781, 782
Reproduction 782-783
Size 775, 777, 781
Social relationships 775, 777, 782, 783, 784; With humans 778-779, 780, 783-784
Young **780**; Abandonment 783-784; Birth 782-783
Spice cultivation: Grenada 701, 705
Spiegel, Ted, photographer: ***Beyond Supermouse: Changing Life's Genetic Blueprint.*** Dec., 818-847
Spirituals, coded: Underground Railroad 39
Sporhase, Joy **206**
Spotted deer: Tiger prey 748, 750, 754, 770-771
Springtails **365, 372**
Sprüngli, Rudolph 682-683
Squam (lake), N. H.: Common loons **574-575**
Squid: Sperm whale prey 777, 782, beaks 781, **781**
Sri Lanka: Monsoon 727; Whale conservation 776, 784
Stag hunt: Highlands (region), Scotland **41**
"Stake Hitch" (Oldenburg) **299**
Stanfield, James L., photographer: ***Chocolate: Food of the Gods.*** Nov., 664-687; ***Time and Again in Burma.*** July, 90-121
Stanton, Elizabeth Cady 35
Statue of Liberty (chocolate sculpture) 687, ***Nov. cover***
Statues: Buddhas 101, **107**; Jaguar, stone **431,** 439, 441; Pyu figurines 1, **1,** 121
Steamboat Springs, Colo.: Population 193; Ski resort 193, 200; Winter carnival **192, 193**
Steben, Ralph 506
Stedoy Island, Antarctica 661
Steel hardeners: Molybdenum 195, 196; Vanadium 214
Steel industry, decline of: Pueblo, Colo. 210; Scotland 44, 49
Steinbeck, John 324, 326, 344; Works quoted 268, 343
Stemmons, John 290, 294
Stevens, Fred, Jr. 518, 520
Stevens, Thaddeus 31, 35
Stevenson, Robert Louis 62
Stewart, Thomas 833
Still, Clarence 31
Still, William 3, **11, 13,** 29, 30, 31; Descendants 30-31, reunion **10-11,** 30; Quoted 11
Stirling, Hannah 68
Stone, Edward Durell 555, 559
Storage Technology Corporation, near Boulder, Colo. 203
Stover, Lew 505
Stowe, Harriet Beecher 13, 15, 19
Strauch, Patricia Gulas 185
Strawberry farming: Skagit Valley, Wash. **374-375**
Strip-cropping, patterns made by **390-391, 398-399**
Stroud, Butch, and children 349, **349**
Stuart, Charles Edward 48, 59, 64
Stuart, Henry 43
Stuart, Jeb **317, 320**
Subsidence: Bangkok, Thailand 727, 746; Mexico City, Mexico 144, 146, 149, 152, 161
Subway system: Mexico City, Mexico **142-143,** 144, 152-153, 155
Suchard-Tobler (chocolate company), Neuchâtel, Switzerland 683
Sudan: Body adornment: Dinka **606, 607, 611, 612,** Nuer **611,** Rashaida **605,** Toposa **604, 609**
Sugar beets: Spain 463, 473
Sugarcane, wild: Burma 104-105
Sulawesi (island), Indonesia: Drought (1983) 730; Rice field **744-745**
Sule Pagoda Road, Rangoon, Burma **96-97**
Sulfuric acid: Soil salt treatment **362-363**
Sullom Voe (oil terminal), Shetland Islands, Scotland **47,** 54
Sumac pollen **514**
Sumatra (island), Indonesia: Monsoon rains 730
Sunflower: Genetic research **835,** 837
Superior Tree Program: Douglas fir breeding **504, 505**
Su Su Win **101**
Sutter Butte Outing Club 594
Sutter Buttes (massif), Calif. 593
Swahili (people): Jewelry, silver **603**
Swainsboro, Ga. 353; Farm lawyer **377**
Swans **562-563,** 583; Aviation hazard 571
Swartz, Harry 516
Sweden: Fossil pollen **506;** Pollen production 501; Pollen products industry 508-509
Switzerland: Chocolate 682, companies 682-683, 686, consumption 668, 682, invention of milk chocolate 669, 681, 686
Sylva, Lyvia: Salon **521**
Symington, Michael **467**
Synthetic fuel industry: Colorado 212, shale-oil extraction plants **212,** 215, 217-218

T

"T-value" (soil erosion tolerance measure) 381
Tabasco (state), Mexico 444; Spanish-Maya battle site 426, 433
Tabin, Geoffrey 84
Tabor, H. A. W. 195
Taillevent (restaurant), Paris, France 686
Takeda, Tetsuo **826**
A Tale of Two Cities (Dickens): Quoted 668
Tamayo, Rufino **163;** Artwork **163**
Tamil Nadu (state), India 728, 740, 746
Tangaroa (Maori god) 542; God stick **544**
Tartans: Edinburgh, Scotland **45**
Tasikmalaya, Java (island), Indonesia 743
Tateyama (peak), Japan 240; Shrine 242, **246**
Taung Lay Lone Monastery, Amarapura, Burma 114
Tawhai, Minnie 539
Tawhai, Wiremu 537, 539
Tawhiao, King (Maoris) **526-527**
Taylor, Luke 736
Taylor, Fladgate & Yeatman (port-wine shippers): Winery 481-482
Tea growing: Burma 107
Te Aitanga-a-Mate (Maori descent group) 531
Teak: Burma 102-103, 105, 107, logs **102-103**
Teals: Blue-winged **576;** Cinnamon **580**
Teej (festival) 726
Tehachapi Mountains, Calif.: Tehachapi Pass **338,** 343; Windstorms 355
Te Hei, Marino 540
Te Hei, Ron 540
Tejon Hills, Calif.: Motor trike riding 349
Te Kaha, New Zealand: Maoris **528,** 536-537, 539, **541**
Telegraph Cove, Vancouver Island, British Columbia, Canada 226, 230
Telluride, Colo. 201; Autumn festival 190; Hang gliding festival **191**

UMI

Te Maori (art exhibition): ***Maoris: Treasures of the Tradition.*** By Douglas Newton. Oct., 542-553
Temples, Buddhist: Burma 90, **92-93**, 94, **96**, 115, **116-117**, **119**
Temples, Totonac: Mexico **426**, **427**, 433, 434
Tennessee: Erosion **378**, 381, **389**; Loess 381, 382; Soil conservation 378, 381
Tenochtitlan (Aztec capital) 146, 148; ***Following Cortés: Path to Conquest.*** By S. Jeffrey K. Wilkerson. Oct., 420-459
Tenth Mountain Division (U. S. Army unit) 199
Tenzing Norgay 75, 88
Tepito, Mexico City, Mexico: Boxers 164, **173**; Market 164
Tetrodotoxin 264, 270; Effects of 261, 263, 270
Texas: Agriculture 354, 357, 387, farms **392**, **396**; Blue laws 283; Electronics industry 282; Erosion 357, 360, 386-387, 388; History 278, Indians, ancient 506, Okies 326, 339; *see also* Dallas, *outlined*
Texas School Book Depository, Dallas, Texas 304
Texas Stadium, Dallas, Texas **288-289**, 292
Texcoco, Lake, Mexico 146, 148, 424; Painting **456-457**
Textile industry: Scotland 54, **62**
Thailand: Karen refugees 113, **114-115**; Monsoon rains 727
Thatcher, Margaret 49
Theobroma (cacao tree) 666, 669, 674, 678
Thibaw, King (Burma) 109, 118
Third World: ***The World's Urban Explosion.*** By Robert W. Fox. Aug., 179-185; *see also* Africa; Burma; India; Mexico
Thomas, R. C. 387
Thomas, Trevor 690
Thompson, Michael David **36**
Thoreau, Henry David 35
Thorner, Juliet 344
Thornton, Bob 278
Thurow, Harold **360**
Tibet (autonomous region), China: ***Conquest of the Summit.*** By James D. Morrissey. July, 79-89; ***The Forgotten Face of Everest.*** By Andrew Harvard. July, 71-77
Tiger fugu (fish) **263**, 266; Sashimi 261, 263, **264-265**
Tigers: ***Tiger! Lord of the Indian Jungle.*** By Stanley Breeden. Dec., 748-773
Tikar (people): Pendant **602**
Tikitiki, New Zealand **528-529**; Anzac Day **538-539**
Timber Corporation, Burma 107
Time and Again in Burma. By Bryan Hodgson. July, 90-121
Timor (island), Malay Archipelago: Drought (1983) 730
Tlalpan Causeway, Mexico City, Mexico 456, 458
Tlaxcala, Mexico: Bullfight **446-447**; Cortés's army 459; Mural **445**
Tlaxcala (state), Mexico 444; Cortés's route 446
Tlaxcalan Indians: Alliance with Cortés 443, 444, 448, 459, painting **445**; Battles with Spaniards **442**, **443**, 446, 448; Ceremonial wars 443, dress **443**
Tobacco: Planting **374-375**; Soil depletion 376
Tobin, Carl 84
Togakushi (shrine), Japan **254-255**
Tokomaru Bay, New Zealand: Dining hall **529**
Tombs: Maya 137, **137**, 137A, **137A**, 137B, **137B**; Stone Age 51, Norse inscriptions **51**
Toposa (people): Body adornment **604**, **609**; Wrist knife **609**
Topsfield, Mass.: Fair **802**, 803
Topsoil: ***Do We Treat Our Soil Like Dirt?*** By Boyd Gibbons. Sept., 350-389
Tordesillas, Spain 463, 473, 476
Toro, Spain 476; Tavern **483**; Wine production 476, 482
Torres, Andres Milian 137, 137A
Tortes: Sacher torte 682, **685**
Tortillas: Cooking **434**
Totalco (ruins), Mexico **436-437**, 443
Totonac Indians: Alliance with Cortés 426, 429, 433, 434; Human sacrifice 426, 433; Historical limits of lands 438; Subjugation by Aztecs 425, 429; Temples **426**, **427**, 433
Towaoc, Colo. 214; Head Start class **195**
Tractor, vintage **795**
Trailer park: Battlement Mesa, Colo. **212**
Train, steam-powered **190**
Trás-os-Montes (region), Portugal 477-479, **478-479**; Iron ore deposits 488
A Traveler's Map of Spain and Portugal. Oct. supplement
Travers, Addie 27
Travis, Clifford 194-195
Travis, Frank 194
Treasure looting: Orkney Islands, Scotland (12th century) 51; Río Azul (ancient city), Guatemala (1979-1980) 137A-137B
Trees: Arboretum 105; Autumn foliage **190**, **216**, **790-791**; Pollen seasons, chart showing **512-513**; Sapling **305**; *see also* Cacao trees
Trinity River, Texas 278, 279, 282, 300, 304
Trivandrum, India 722, 724, 728; Drought (1983) 717, 728, 730, 737; Fishermen 741, 744; Seasonal rainfall, graph showing **717**; Weather station 716, **716**
Trolley car: Westerly, R. I. (1920s) **793**
Trolleybuses: Mexico City, Mexico **154-155**
Trows (legendary creatures) 55
True History of the Conquest of New Spain (Diaz del Castillo) 424
Trumpeter swans **562-563**, 583
Truth, Sojourner 17, 22, 23
Trzebiatowski, Mike **362**
Tsugaike, Japan: Disco **251**
Tsurugi (peak), Japan 240
Tuareg (people): Chief **629**; Jewelry **627**, **629**; Lifestyle 628
Tubman, Harriet **2**, 22-23, 27, 28, 29, 39, ***July cover;*** Birthplace 3, 27; Death 35, 39; Home **35**
Tucson, Ariz.: Allergy prevalence 491, 514; Exotic plants 520; Hay fever sufferers 491, 514; Mulberry trees **515**, 520; Pollen law 520; Pollen levels, growth in 491, 514, 520; Pollens 491, **514**, 520
Tucumcari, N. Mex.: Motel **339**, 342
Tuesday Garden Club meeting: Highland Park, Texas **286-287**
Tulare, Calif. 344, 345
Tule Lake National Wildlife Refuge, Calif.: Lesser snow geese **578-579**
Tulip (research vessel): ***Rare Look at Sperm and Blue Whales: The Unknown Giants.*** By Hal Whitehead. Dec., 774-789
Tumors: Detection 830, 832, **844**, 845
Tunisia: Gold necklace, scented **620**
Turkana (people): Headrest **609**; Thumb knife **609**
Turner, Clayton 348-349
Tutanekai (Maori chief): Gate honoring **542**, detail **543**
Twiford, Roland 577
Twins, calf: Research subjects **826**

U

Ultralight aircraft: ***Iceland's Wild Glacier-born River.*** By Paul Vander-Molen. Sept., 306-321
Uncle Tom's Cabin (Stowe) 13, 15, 19, 38
The Underground Rail Road (Still) 3, 9
The Underground Railroad. By Charles L. Blockson. July, 3-39
Union City, Tenn.: Erosion 381
Union of Soviet Socialist Republics: Border dispute 711; United States, grain bought from 360; Whaling 784, killer whale slaughter 234, 236; Yellow rain controversy 509
Union Oil Company plant, Parachute Creek, Colo. **212**, 217-218
United Nations: Population projections 180, 182, graphs **180**, map 181; World population conferences 175, 179
United States: *Central Rockies,* The Making of America map series. Aug. supplement; Cacao bean imports 668, 674; Choco-

UMI

late consumption 678, 682, 686, map 668; Chocolate production 668; ***Do We Treat Our Soil Like Dirt?*** By Boyd Gibbons. Sept., 350-389; ***A Journey Down Old U. S. 1.*** By Bruce Dale. Dec., 790-817; Mexican immigrants 175; ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599; ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349; ***Patterns of Plenty: The Art in Farming.*** By Georg Gerster. Sept., 391-399; Pollen seasons, chart showing **512-513;** Population: Scottish descent 44; ***The Underground Railroad.*** By Charles L. Blockson. July 3-39; *see also* Colorado; Dallas, Texas; Florida; Island Park, Idaho; Washington, D. C.
U. S. Air Force Academy, Colorado Springs, Colo. **198-199,** 206-207
U. S. Army: Black Seminole unit (1870s) **20-21,** 22; Grenada invasion 694, 695; Training facilities: World War II 199, 209, 214
U. S. Army Corps of Engineers: Cache River flood-control project 566
U. S. Coast Guard: Icebreaker **637,** 645, 648
U. S. Department of Agriculture: Foot-and-mouth virus research 833; Soil conservation funding 382
U. S. Department of the Interior: Federal duck stamp **582,** 586
U. S. Fish and Wildlife Service 566, 579, 591; Cache River plan 566; Manatee studies 416, 418
U. S. Forest Service: Tree breeding program **504, 505**
U. S. Marine Corps: Grenada invasion 694
U. S. Route 1: ***A Journey Down Old U. S. 1.*** By Bruce Dale. Dec., 790-817
Accessibility 795
Bridges **803, 804-805, 806-807, 816-817**
City portions **793,** 795, 804, **804-805, 806-807**
Commercial development along 791, 796, **808**
Construction 790, **793;** Completion date 792
Decline 793, 795; Of businesses along **794, 812**
Endpoints 790, 792
History 790, 793, 798, 806, 807, 809
Length 792
Map 792
Original highway, traces of **808-809**
Tourist route 793, 813
U. S. Route 58 **338-339**
U. S. Route 66: ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349
U. S. Route 80: Okie family (1937) **326-327**
U. S. Route 81 334
U. S. Route 99 344
U. S. Soil Conservation Service: ***Do We Treat Our Soil Like Dirt?*** By Boyd Gibson. Sept., 350-389
University of Colorado, Boulder, Colo.: Students **210**
University of Texas Southwestern Medical School, Dallas, Texas: Space Medicine Laboratory **283**
The Unknown Giants. By Hal Whitehead. Dec., 774-789
Uranium mining 214-215
Uravan, Colo. 214
Urbanization: Mexico 147, 175; Scotland 59; ***The World's Urban Explosion.*** By Robert W. Fox. Aug., 179-185
Urbión, Picos de, Spain 463, 468
Utah: *Central Rockies,* The Making of America map series. Aug. supplement
Ute (language) 213, 214
Ute Indians 186, **195,** 213, 214
Ute Mountain Indian Reservation, Towaoc, Colo. **195**
Uttar Pradesh (state), India 746; Flash floods (1983) 723

V

Vaccines: Biotechnology applications 833, 836
Vaidyanathan, Kunnakkudi 740
Vail, Colo. 199-200; Residents **209;** Ski resort **193,** 199, 209
Valdez, Arnie and Maria 211
Valladolid, Spain 469, 471, 473; Matador **489**
Vampire bats: Mexico 429, 438
Van Buren, Maine 792
Vancouver, British Columbia, Canada: Aquarium **236**
Vancouver Island, British Columbia, Canada: ***The Whales Called "Killer."*** By Erich Hoyt. Aug., 220-237
Van Dam, Ernie **294**
Vander-Molen, Paul **320;** ***Iceland's Wild Glacier-born River.*** Sept., 306-321
Van Houten, Conrad 669, 678
Van Zeller, Christiano and Teresa **477,** 482
Varanasi, India: Flooded **722-723**
Vargellas, Portugal: Winery 481-482
Vatcher, Peter 222
Vatnajökull (glacier), Iceland **309;** Geothermal springs 306, **317;** Ice cave **312-313, 314-315;** River source 306, **306-307,** 310; Waterfall **316;** Weather 308, **310,** 312
Velasco, Victoria 432, 438, 455
Veracruz, Mexico 420, 425; Festival-goer **444**
Veracruz (state), Mexico: Capital 435; Governor 432
Veraval, India: Storm 744
Vermont: Farm **397**
Vesilind, Priit J.: ***Monsoons: Life Breath of Half the World.*** Dec., 712-747
Veterans, World War II: Maoris **538,** gravestone **538**
Vian, Okla.: Residents 328, **329,** 330-331, 334
Victoria and Albert Museum, London, England 107
Vieira Marques, Joaquim **472**
Vienna, Austria: Chocolate cake bakers 682, **684-685**
Vietmeyer, Noel D.: ***The Preposterous Puffer.*** Aug., 260-270
Vikings: Mead 503
Vila Nova de Gaia, Portugal: Port-wine shippers' lodges 481, 485, blending room **462**
Villa Rica de la Vera Cruz, Mexico 425, 426, 429, 432; Site **425,** 426, 432
Villacampo, Spain 476
Villar Hernández, Julio 466
Vineyards: Portugal **470-471, 474-475, 477,** 482
vinho verde (green wine) 471, 486
Virén, Lasse 506
Virginia: Slavery era: Auction **8,** fugitive slaves 10, **11,** Nat Turner's insurrection (1831) 6; U. S. Route 1 **807,** construction (1918) **793**
Viruses 820; Genome 823; Interferon treatment 831
Volcanic debris: Java (island), Indonesia **738-739,** 742-743
Volcanoes: Japan 240-241; Mexico 420, 443, 448, **452,** 454, 455 *see also* Orizaba, Pico de
Von Lerch, Theodor 242

W

Wade, Mike and Tilford 575
Wagner, Frederic 289
Waiapu River, New Zealand 522, **528**
Waikato (Maori tribe) 542; War god representation **553**
Waipiro Bay Church, Waipiro, New Zealand: Wedding **535**
Waitangi, Treaty of (1840) 526
Walker, Jonathan **12,** 37
Walker, Kate 419
Walker, Vaughn 54
Wall Street Journal (newspaper): Quoted 175
Wallace, William 44
Wallace, La.: Evergreen Plantation **26,** slave quarters **26, 27**
Walton, Laird and Jeannine **187**
Warmenhoven, Rangimai **523**
Washington, George 807
Washington: Farms **378-379, 398-399;** Okies 339
Washington, D. C.: Civil rights demonstrations **38-39,** 39; ***Our Society Opens New Doors.*** By Gilbert M. Grosvenor. Oct., 554-560; Slavery era 27, relics **25**
Washington Monument, Washington, D. C., view from **806-807**

UMI

Washington Post (newspaper) 554
Water buffalo: India **720;** Nepal **732, 733**
Water Festival: Burma 90, **90-91**
Water lilies: India **764-765,** 773
Water resources: Snow 202
Water rights: Colorado 202, 206
Water vendors: India 737, 739
Waterfalls: Iceland 306, **316,** 318, **321**
Waterfowl: ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599
Waterfowl Festival: Easton, Md.: Window display **591**
Watkins, William 777
Watson, James D. **823,** 832
Weapons: Liver cutter **545;** Wrist knife **609**
Weather: ***Monsoons: Life Breath of Half the World.*** By Priit J. Vesilind. Dec., 712-747; *see also* Dust storms
Weaver, Robert F.: ***Beyond Supermouse: Changing Life's Genetic Blueprint.*** Dec., 818-847
Webster, Peter 724
Webster Avenue, New York, N. Y. **804**
Weddell seals: Antarctica **656,** 661, research 642, 656, **657,** 661
Wedding cakes **796**
Wedding customs: Maoris 534; Mexico 167; Mixtecs, 12th-century **666**
Weddings: Aspen, Colo. **187;** Burma **101;** Maoris **534, 535**
Weeds: Pollen seasons, chart showing **512-513**
Weilgart, Lindy 782, 783
Weinstein, John 832
Weir, Tom 59
West (region), U. S.: ***The Okies—Beyond the Dust Bowl.*** By William Howarth. Sept., 322-349; *see also* Rocky Mountains
West Africa: Ancestor worship 616, altar **617,** anklet **616;** Cacao and cacao production 666, 673, 674, map 668; Currency 669; Glass beads **603;** Monsoon 725
West Dallas, Dallas, Texas: Public-housing projects **291,** 300, 301, 304
West End, Dallas, Texas 274
West Indian manatee: ***Man and Manatee: Can We Live Together?*** By Alice J. Hall. Sept., 400-413; ***Man Can Save the Manatee.*** By Jesse R. White. Sept., 414-418
Calves: Birth 414-415, **416,** 417; Nursing **405, 410**
Captive-breeding program 414, 416, 417, 418
Conservation efforts 400; Educational programs 418; Hot line 402, 415; Motorboating regulations 402, 415; Protective sculpture **415;** Rescues 414, 415, 418; Sanctuaries 402, 415; *see also* Captive-breeding program, *above;* Studies, *following*
Courtship 405, **406-407**
Dangers: Loss of habitat 402, 415, 418; Motorboat propellers 400, **400,** 414, 415
Deaths: Caused by humans 402; Death rate (Florida) 402, 418
Diet 402, **404,** 415; Supplemented for breeding 416, 417, 418
Females: Calving 405, 414-415, 416, **416,** 417; Estrus 405, **406-407;** Maturity age 405, 414, 416; With calves **400, 405, 410-411, 416, 417**
Play 405, **412-413**
Population: Florida 402, 414
Range 415; Map 403
Reintroduction 416, 417, 418
Size 404, 414, 415; Birth 415, 417
Studies 400, 416, 418; Learning ability test **418;** Radio tracking 409, **417,** 418
West Indies: Cacao plantations 668; *see also* Grenada
Westerly, R. I.: Trolley car (1920s) **793**
Western Ghats (mountains), India 736; Monsoons 719, 727
Weston, Walter 240, 251
Westward migration (U. S. history) *see* Okies, *outlined*
Wetlands: ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599
Whales: ***Rare Look at Sperm and Blue Whales: The Unknown Giants.*** By Hal Whitehead. Dec., 774-789; *see also* Killer whale
The Whales Called "Killer." By Erich Hoyt. Aug., 220-237
Whaling, commercial: Banned, in Indian Ocean 776, 779, 784; Blue whales 787; Killer whale slaughter 234, 236; Sighting techniques 780; Sperm whales 775, 781, 784
Whanau-a-Apanui (Maori tribe) 536-537, 539
Whareponga, New Zealand: Maori funeral 531-532
Where Gods Dwelled—The Japan Alps. By Charles McCarry. Aug., 238-259
Whisky, Scotch 42, 53
White, Elizabeth 514
White, Jesse R. **414;** ***Man Can Save the Manatee.*** Sept., 414-418
White Mountain Apaches: Pollen use **518**
White oak flowers **512**
Whitehead, Hal **776;** ***Rare Look at Sperm and Blue Whales: The Unknown Giants.*** By Hal Whitehead. Dec., 774-789
Whittier, John Greenleaf **13**
Whyte, Winston 710
Wigeons, American: Federal duck stamp (1984-1985) **582**
Wild rivers: ***Iceland's Wild Glacier-born River.*** By Paul Vander-Molen. Sept., 306-321
Wildlife: Antarctica: ***Icebound in Antarctica.*** By David Lewis. Nov., 634-663; Asia *see* Tigers; North America: ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599, *see also* Great gray owl, Killer whale, West Indian manatee; *see also* Puffers (fish); Whales
Wildlife management: ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599
Wildlife refuges: ***North American Waterfowl: Troubles and Triumphs.*** By John Madson. Nov., 562-599; ***Tiger! Lord of the Indian Jungle.*** By Stanley Breeden. Dec., 748-773; *see also* Marine mammals sanctuaries
Wilkerson, S. Jeffrey K. **425;** ***Following Cortés: Path to Conquest.*** Oct., 420-459
William III, King (England) 59
William Grant & Sons: Glenfiddich distillery 53
Williams, Angela **298**
Williams, Elizabeth and Jay 813
Williams, J. L. 289
Willowbend Polo and Hunt Club, Dallas, Texas 291
Wilmington, Del.: Underground Railroad 13, 15, 25, 28-29
Wilson, Steven C., photographer: ***Do We Treat Our Soil Like Dirt?*** Sept., 350-389
Winches: Mountain climbing **80,** 81, **81,** 83
Winds: ***Monsoons: Life Breath of Half the World.*** By Priit J. Vesilind. Dec., 712-747; Windstorm aftermath **356-357;** *see also* Dust storms
Wine cellars: House of Ferreira's 485; In hillsides 468
Wine making: Portugal 469, 474, 475, 480, 482, *vinho verde* 471, 486; Toro, Spain 476; *see also* Port wine
Wine tasters: Portugal **462,** 482
Winfree, Ray 206, 207
Winter carnival: Steamboat Springs, Colo. **192, 193**
Winter wheat: Colorado **188-189;** Kansas **396-397;** Palouse Hills, Idaho-Wash. 398, **398-399**
Winterover Bay, Filla Island, Antarctica: ***Icebound in Antarctica.*** By David Lewis. Nov., 634-663
Winton, J. Merlin 596, 598, 599
Wiscasset, Maine: Bridge worker **797**
Wischmeier, Walter 381
Wisconsin: Underground Railroad site 17, **22, 23**
Wisconsin glaciation 376
Witchcraft: Portugal 478
Witches'-broom 674
Wittwer, Chester 186
Wodaabe (people): Jewelry **605, 632, 633**
Wolfpit, N. C.: Funeral **810,** 811, **811;** U. S. Route 1 **810**
Wolman, M. Gordon 360
Wood, Frances 790, **790**
Wood ducks **581,** 582-583

Woodward, Okla. 335
Woodyard, Dale **418**
Wool, Shetland: Carding and spinning **62**
World: ***Chocolate: Food of the Gods.*** By Gordon Young. Nov., 664-687; ***Monsoons: Life Breath of Half the World.*** By Priit J. Vesilind. Dec., 712-747; ***The World's Urban Explosion.*** By Robert W. Fox. Aug., 179-185
World War II: Burma 94, 96, 109, 118; Maoris 526, **527**, 532, 538, 540; U. S. Army training facilities 199, 209, 214
World Wildlife Fund International: Board meeting 555; Project Tiger 755
World Wildlife Fund of the Netherlands: Study grants: Whale research 777, 784
Wright, Belinda, photographer: ***Tiger! Lord of the Indian Jungle.*** Dec., 748-773
Worms: Earthworms **364-365, 373,** 375, castings 364, **365, 372;** Pot worms **372,** slime track **373**
Wright, Robin 207
Wrinkle therapy: Pollen mask **521**
Wrist shackles: Slavery era **24**
Wuhan, China 746
Wyandot County, Ohio: Farmer **372**
Wynne, Shannon 292
Wyoming: *Central Rockies,* The Making of America map series. Aug. supplement

X

X ray: Duck **593**
Xalapa, Mexico 435, 438
Xegar, Tibet (autonomous region), China 77, **77;** Monastery (1922) **77,** destruction of 77
Xico, Mexico 429, 438-439
Xicochimalco (Indian province), Mexico: Cortés's route 426, 438, 439
Xicochimalco (region), Mexico 425, 438, 439
Xicotencatl (Tlaxcalan leader) 448
xocoatl (chocolate drink) 666
Xochimilco, Mexico: Floating gardens 164

Y

Yamagishi, Toyomi 242
Yangtze River, China: Flood (1983) 746
Yari (peak), Japan 240; Ascent 242-243; Climbers, deaths of 240, 245, 248
Yarmouth (geologic age): Soil 377
Yasumoto, Hakushu **269**
Yatsu (mountain), Japan 240
Yellow rain: Controversy 509; Spotted leaves **509**
Yellow Wolf (Ute elder) 213; Funeral 186
Yezin Agricultural Research Station, Burma 104
Yoruba (people): Jewelry **602, 618**
Young, Gordon: ***Chocolate: Food of the Gods.*** Nov., 664-687
Younger, George 49
Your Society's Newest Building. By Gilbert M. Grosvenor. Oct., 554-560

Z

Zamora, Spain: Holy Week processions 476, **488;** Legends 476
Zautla, Mexico 441, 444
Zaw Phome Kyaw **108, 109**
Zempoala, Mexico 433, 434; Ruins **426,** 433; *see also* former name, Cempoala
Zhao Zhen 728
Zimmerman, Elyn: Sculpture by **560**
Zócalo (central square), Mexico City, Mexico 148, 458, 459; Mime 158; Parade 169, 172; Protestors 172
Zulu (people): Necklaces **603**

INDEXING STAFF

JOLENE M. BLOZIS *Editor*
ANNE K. McCAIN *Assistant Editor*
DIANNE L. HARDY *Issue Editor*
TERESA P. BARRY
JEFFREY A. BROWN
GEORGE I. BURNESTON, III
CATHERINE WARFORD

UMI